THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR APRIL 1851.

CONTRIBUTORS TO THIS VOLUME.

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John Watson, M. D., *Surgeon to the New York Hospital.*

H. W. Williams, M. D., *of Boston.*

J. Wilson, Jr., M. D., *formerly of Philadelphia.*

TO READERS AND CORRESPONDENTS.

Dr. WARREN's cases of Occlusion of the Vagina relieved by operation, and Dr. THAYER's cases of Apoplexy and the various forms of softening of the Brain, are in type for our next number.

The communications of Drs. W. M. WOOD, G. W. BASKIN, R. MCSHERRY, J. H. RAUCH, and W. J. BARNETT, are on file for publication. We have other papers under consideration, in relation to which their authors shall hear from us at an early period.

The following works have been received:—

Essays and Notes on the Physiology and Diseases of Women, and on Practical Midwifery. By JOHN ROBERTON, formerly Senior-Surgeon in ordinary to the Manchester and Salford Lying-in Hospital and Dispensary for the Diseases of Women and Children. London: John Churchill, 1851. (From the Author.)

Notes of a recent visit to several Provincial Asylums for the Insane in France. By JOHN WEBSTER, M. D., F. R. S. London, 1850. (From the Author.)

On the Health of London during the six months terminating Sept. 28th, 1850. By JOHN WEBSTER, M. D., F. R. S. London, 1850. (From the Author.)

First Principles of Medicine. By ARCHIBALD BILLING, M. D., F. R. S., the second American from the revised and improved fifth London edition. Philadelphia: Lea & Blanchard, 1851. (From the Publishers.)

Operative Surgery. By FREDERIC C. SKEY, F. R. S. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

New Remedies: with Formulæ for their Administration. By ROBLEY DUNGLISON, M. D., Professor of Inst. of Medicine, &c., in Jefferson Medical College. Sixth edition, with extensive additions. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

A Treatise on Dislocations and Fractures of the Joints. By Sir ASTLEY COOPER, Bart., F. R. S., &c. A new edition, much enlarged, edited by BRANSBY B. COOPER, F. R. S., Surgeon to Guy's Hospital. With additional observations, and a memoir of the author. A new American edition. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

The Dissector; or Practical and Surgical Anatomy. By ERASMUS WILSON, Author of a "System of Human Anatomy," &c. With one hundred and fifteen illustrations. Edited by PAUL B. GODDARD, M. D. A new and improved edition. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

Report of a General Plan for the Promotion of Public and Personal Health, revised, prepared, and recommended, by the Commissioners appointed under a Resolve of the Legislature of Massachusetts relating to a Sanitary Survey of the State. Presented April 25th, 1850. Boston, 1850. (From the Author, L. SHATTUCK, Esq.)

Elements of Medical Jurisprudence. By THEODORIC ROMEYN BECK, M. D., LL.D., Professor of Materia Medica in the Albany Medical College; and JOHN B. BECK, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the city of New York. Tenth edition, Vol. II. Albany, 1851. (From Dr. T. R. Beck.)

Reduction of Strangulated Hernia in Mass. By GEO. C. BLACKMAN, M. D. New York, 1851. (From the Author.)

A History of the Disease usually called Typhoid Fever, as it has appeared in Georgetown and its vicinity, with some Reflections as to its Causes and Nature.

By W. L. Sutton, M. D., Georgetown, Ky. Louisville, 1850. (From the Author.)

Illustrations of Syphilitic Disease. By Philip Ricord, D. M. P. &c. Translated from the French by Thomas F. Betton, M. D., &c. With the addition of a History of Syphilis, and a complete Bibliography and Formulary of Remedies, collated and arranged by Paul B. Goddard, M. D. With fifty large quarto plates, containing one hundred and seventeen beautifully coloured illustrations. Phila., A. Hart, late Carey & Hart, 1851, 4to. (From the Publisher.)

A Practical Treatise on Dental Medicine, being a Compendium of Medical Science, as connected with the study of Dental Surgery. By Thos. E. Bond, M. D., Prof. of Dental Pathol. and Therap. in Balt. Coll. Dental Surgery. Phila., Lindsay & Blakiston, 1851. (From the Publishers.)

Ether and Chloroform, their employment in Surgery, Dentistry, Midwifery, Therapeutics, &c. By J. F. B. Flagg, M. D., Surgeon Dentist. Phila., Lindsay & Blakiston, 1851. (From the Publishers.)

The Medical Student's Guide in Extracting Teeth, with numerous cases in the Surgical Branch of Dentistry, with illustrations. By S. S. Horner, Practical Dentist. Phila., Lindsay & Blakiston, 1851. (From the Publishers.)

History of Medical Education and Institutions in the United States, from the first settlement of the British Colonies to the year 1850; with a chapter on the present condition and wants of the profession, and the means necessary for supplying those wants, and elevating the character and extending the usefulness of the whole profession. By N. S. Davis, M. D., Prof. of Prin. & Pract. of Med., in Rush Med. Coll., &c. &c. Chicago, 1851. (From the Author.)

On Diseases of Menstruation and Ovarian Inflammation, in connection with Sterility, Pelvic Tumours, and Affections of the Womb. By Edward John Tilt, M. D., Physician to the Farrington General Dispensary. New York. S. S. & W. Wood, 1851. (From the Publishers.)

Consumption of the Lungs, or Decline: the Causes, Symptoms, and Rational Treatment, with the Means of Prevention. By T. H. Yeoman, M. D. Revised by a Boston Physician. Boston, 1850.

Annual Report of the Royal Edinburgh Asylum for the Insane, for the year 1849. Edinburgh, 1850.

Report of the Board of Visitors of the Boston Lunatic Hospital, containing a statement of the condition of that Institution, and transmitting the Annual Report of the Superintendent for 1850. Boston, 1850. (From Dr. C. H. Stedman.)

Twenty-third Annual Report of the President and Directors of the Western Lunatic Asylum, 1850. Richmond, 1850. (From Dr. F. T. Stribling.)

An Address delivered before the Erie County Medical Society, Jan. 7th, 1851. By Rev. Wm. Flint, M. D. Erie, 1851.

Report of the Pennsylvania Hospital for the Insane, for the year 1850. By Thomas S. Kirkbride, M. D., Phys. to the Institution. Phila. 1851. (From the Author.)

The Twenty-second Annual Report of the Inspectors of the Eastern State Penitentiary of Pennsylvania. Transmitted to the Senate and House of Representatives, March, 1851. Philadelphia, 1850. (From R. A. Given, M. D.)

Annual Report of the Officers of the New Jersey State Lunatic Asylum, at Trenton, for the year 1850. Trenton, 1851. (From Dr. H. Buttolph, Superintendent.)

An Introductory Lecture delivered at the opening of the thirty-first Session of the Medical College of Ohio, Nov. 4th, 1850. By John Bell, M.D., Professor of Theory and Practice of Medicine, &c. &c. Cincinnati, 1850. (From the Author.)

Impediments to the Study of Medicine. A Lecture Introductory to the course of Practice of Medicine. By J. K. Mitchell, M.D., Prof. of Pract. Med. Delivered Nov. 18th, 1850. Phila. 1850. (From the Author.)

Success in the Medical Profession. An Introductory Lecture, delivered at the Massachusetts Medical College, Nov. 6th, 1850. By JOHN WARE, M.D., Hersey Prof. of the Theory and Practice of Medicine, in Harvard University, Boston, 1851. (From the Author.)

Proceedings of the Convention and Missouri State Medical Association, held at St. Louis in Nov. 1850. St. Louis, 1850.

Constitution, By-Laws, and Proceedings of the Iowa State Medical and Chirurgical Society organized June 19, 1850. Burlington, 1850.

The Memorial of M. B. Wright in relation to the Medical College of Ohio; the official misconduct of its trustees; the mal-administration of its affairs; and the dangerous position of the Commercial Hospital, read to the forty-ninth General Assembly. Columbus, 1851. (From the Author.)

Minority Report of the Trustees of the Medical College of Ohio. Senate, Jan. 8, 1851.

Catalogue and Circular of the Albany Medical College. Albany, 1851.

First Annual Announcement of the Medical Department of the University of Nashville. Nashville, 1851.

Circular of the Institution for the Education of Idiots, Imbeciles, and Children of Retarded Development of Mind. Barre, Mass., Jan. 1, 1851. Worcester, 1851. (From H. B. Wilbur, M. D.)

The following Journals have been received in exchange:—

Gazette Médicale de Paris, July, August, September, October, 1850.

Revue Médicale Française et Etrangère. Par J. B. CAYOL, Prof. de Cliniques, July, August, September, 1850.

Journal des Connaissances Médico-Chirurgicales. Publié par le Dr. A. MARTIN LAUZER. July, August, September, October, 1850.

Annales Médico-Psychologiques. Par les Docteurs BAILLARGER, BRIERRE DE BOISMONT, ET CERISE. July, October, 1850.

Journal des Connaissances Médicales Pratiques et de Pharmacologie. July, August, 1850.

The Edinburgh Medical and Surgical Journal. Jan., 1851.

The London Medical Gazette. Dec., 1850, Jan., Feb., 1851.

The British and Foreign Medico-Chirurgical Review. Jan., 1851.

The Monthly Journal of Medical Science. Jan., Feb., March, 1851.

London Journal of Medicine. Jan., Feb., March, 1851.

The Journal of Psychological Medicine and Mental Pathology. Edited by FORBES WINSLOW, M. D. Jan., 1851.

The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. RANKIN, M. D. Cantab. vol. xii. July—Dec., 1850.

The Dublin Quarterly Journal of Medical Science. Feb., 1851.

The Institute, a Journal of Medical, Surgical, and Obstetrical Science and Practice, and Philosophical Gazette. Oct., Nov., Dec., 1850, Jan., Feb., 1851.

The Retrospect of Medicine. By W. BRAITHWAITE, July—Dec., 1850.

Dublin Medical Press. Nov., Dec., 1850, Jan., Feb., 1851.

The Western Lancet. Edited by L. M. LAWSON, M. D., and GEO. MENDENHALL, M. D. Jan., Feb., March, 1851.

Northern Lancet and Gazette of Legal Medicine. Edited by F. J. D. AVIGNON, M. D., and H. NELSON, M. D. Jan., Feb., March, 1851.

Buffalo Medical Journal. Edited by AUSTIN FLINT, M. D. Jan., Feb., March, 1851.

The American Journal of Insanity. Published by the New York State Lunatic Asylum. Utica, Jan., 1851.

The New Jersey Medical and Surgical Reporter, and Transactions of the New

Jersey Medical Society. Edited by JOSEPH PARRISH, M.D. Burlington, Jan., 1851.

The Charleston Medical Journal and Review. Edited by Dr. J. CAIN, M.D., and F. P. PORCHER, M.D. Jan., March, 1851.

The New Orleans Medical and Surgical Journal. Edited by A. HESTER, M.D., Jan., March, 1851.

The New York Medical Gazette and Journal of Health. Edited and published by D. M. REESE, M.D. Jan., Feb., March, 1851.

Western Journal of Medicine and Surgery. Edited by L. P. YANDELL, M.D., and T. S. BELL, M.D. Jan., Feb., March, 1851.

The North Western Medical and Surgical Journal. Edited by Dr. EVANS and MEEK. Jan., 1851.

The Ohio Medical and Surgical Journal. Edited by RICHARD L. HOWARD, M.D. March, 1851.

The American Journal of Science and the Arts. Conducted by Professors B. SILLIMAN, B. SILLIMAN, Jun., and JAS. D. DANA, aided in the Department of Chemistry and Physics by Dr. WALCOTT GIBBS. January, March, 1851.

The New York Register of Medicine and Pharmacy. Edited by C. D. GRISWOLD, M. D. January, February, March, 1850.

The Western Medico-Chirurgical Journal. Edited by Drs. J. F. SANDFORD and S. G. ARMOR. December, 1850. January 7, February 1, 1851.

Southern Medical and Surgical Journal. Edited by L. A. Dugas, M. D. January, February, March, 1851.

The New York Journal of Medicine and the Collateral Sciences. Edited by S. S. PURPLE, M. D. January, March, 1851.

St. Louis Medical and Surgical Journal. October, December, 1850, Jan., Feb., 1851.

The American Journal of Pharmacy. Published by Authority of the Philadelphia College of Pharmacy. Edited by WILLIAM PROCTER, Jr., Professor of Pharmacy. January, 1851.

The Medical Examiner and Record of Medical Science. Edited by F. G. SMITH, M. D. and J. B. BIDDLE, M. D. January, February, March, 1851.

The Stethoscope and Virginia Medical Gazette. Edited by F. C. GOOCH, M. D. January, February, March, 1851.

Nordamerikanischer Monatsbericht für Natur-und Heilkunde Redigirt. Von Dr. W. KELLER und Dr. H. TIEDEMANN. January, February, March, 1851.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to ISAAC HAYS, M.D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and sent (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London;* or to John Wiley, or G. P. Putnam, *New York;* or W. D. Ticknor, *Boston;* or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

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Anatomical Museum of the Faculty of Medicine in Strasburg—History of Polypus of the Larynx. By C. H. Ehrmann, Professor to the Faculty of Medicine of Strasburg, &c. &c. &c. Fol., with six lithographic plates: pp. 58. Strasburg, 1850. - - - - - - - - 410

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XV. Elements of Medical Jurisprudence. By Theodoric Romeyn Beck, M. D., LL. D., Prof. Mat. Med. in the Albany Medical College, &c. &c., and John B. Beck, M. D., Prof. Mat. Med. and Med. Jurisp. in the College of Physicians and Surgeons of the City of New York, &c. &c. Tenth edition. Vols. I. and II. Albany, Little & Co. 1851: 8vo. pp. 866—948.

Medical Jurisprudence. By Alfred S. Taylor, F. R. S., &c. &c. Second American, from the Third London edition; with Notes and Additions by R. Eglesfeld Griffith, M. D., &c. Philadelphia, Lea & Blanchard, 1851: 8vo. pp. 670. - - - - - - - 417

XVI. A History of the Disease usually called Typhoid Fever, as it has appeared in Georgetown and its Vicinity; with some Reflections as to its Causes and Nature. By W. L. Sutton, M. D., Georgetown, Ky. Maxwell & Co., Louisville, 1850: 8vo. pp. 127. - - - - 418

XVII. Illustrations of Syphilitic Disease. By Philip Ricord, D. M. P., Surgeon to the Venereal Hospital (Hôpital du midi), Paris, &c. &c. Translated from the French by Thomas F. Betton, M. D., M. A. N. S., Fellow of the College of Physicians of Philadelphia, &c. With the addition of a History of Syphilis, and a complete Bibliography and Formulary of Remedies, collated and arranged by Paul B. Goddard, M. D.; with fifty large quarto plates, comprising 117 beautifully coloured Illustrations. Philadelphia, A. Hart, late Carey and Hart, 1851. - - - 426

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XIX. Sleep Psychologically considered with reference to Sensation and Memory. By Blanchard Fosgate, M. D., Physician to the New York State Prison at Auburn. New York, George P. Putnam, 1850: 12mo. pp. 188. - - - - - - - - - 439

XX. Notes of a Recent Visit to several Provincial Asylums for the Insane in France. By John Webster, M. D., F. R. S., Fellow of the Royal College of Physicians, Consulting Physician of St. George and St. James's Dispensary, &c. London, 1850: pp. 35. - - - - - 442

XXI. A Practical Treatise on Dental Medicine, being a Compendium of Medical Science as connected with the Study of Dental Surgery. By Thos. E. Bond, A. M., M. D., Professor of Special Pathology and Therapeutics in the Baltimore College of Dental Surgery. Philadelphia, 1851: pp. 324. - - - - - - - - 444

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AZTEC DWARF (MALE).

AZTEC DWARF (FEMALE).

THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR APRIL 1851.

ART. I.—*An Account of two remarkable Indian Dwarfs exhibited in Boston under the name of Aztec Children.* By J. MASON WARREN, M. D. [With two plates.]

Two children have appeared in Boston so remarkable for their smallness of stature and the peculiarities of their mental faculties, that they seem to merit some public notice. I propose to state, in the following paper, simple matters of fact, without attempting any speculations in regard to them.

The children are a boy and girl, and from the appearance offered by their dentition, hereafter to be given, the former is from seven to eight years of age, the latter from four to six; allowance being made for a retarded condition of these organs, on account of the otherwise abnormal want of development of the whole body. The boy is thirty-three and three-quarters inches in height, and his weight twenty and three-eighths pounds. The girl is twenty-nine and a half inches high, and her weight seventeen pounds. Their skin is of a dark yellowish cast, lighter than what is generally attributed to the Indian in this part of the country, and somewhat darker than that of the mulatto. The hair at the middle parting rises at an inch distant from the root of the nose, but on each side a fine hair descends quite to the edge of the orbit. In the boy, it is black, coarse, and quite stiff—in the girl, wavy and curled. The eyes are large and lustrous. The nose of the boy is quite prominent, and as seen in profile somewhat arched, but seen in front it is a little flattened at the apex; the nostrils are expanded, this feature being less marked in the girl than in the boy. The line of the nostril is oblique, instead of being longitudinal as in the Caucasian race. The separation of the cartilages at the apex is not easily distinguished. The supra-orbitar ridges are very prominent, the head

receding directly behind. There are no superciliary prominences or tubercles. In the boy a ridge, with its convexity towards the median line, extends from the external angular process of the frontal bone along the edge of the parietal bone, and nearly joins the elevated occipital ridge. The occipital bone is much flattened from behind forwards. The continuation of the sagittal suture through the frontal bone to the ossa nasi, corresponding with the fœtal division, is also elevated into a ridge in the male, but not in the female. A circumstance of some interest is the situation of the external auditory foramen, which is much more in a line with the orbit than usual, a fact I have observed in some small heads of low intelligence. There are no indications that artificial compression has ever been used.

In both the children, the upper jaw projects considerably beyond the lower, the mouth remaining partly open in the boy from a dropping of the lower jaw, which leaves the teeth exposed.

The combination of these two circumstances, connected with a slight escape of the saliva, which may be partly attributed to the irritation caused by dentition, gives a more unintelligent expression to the face when at rest than it would otherwise have. The upper lip is large, and appears swollen as in strumous subjects. The chin is receding.

The anatomical proportions of the girl seem to be in most respects as perfect as could be desired; with regard to the boy, the following are worthy of notice. The forearm is generally maintained in a slightly bent position, and in a state of semi-pronation, permitting neither entire extension nor perfect supination, forming laterally an external obtuse angle with the arm. The little finger is malformed, being shorter than usual, its tip extending only a little beyond the middle joint of the adjacent one; the last joint is inflexible, and the natural folds on the back of the phalanges, which denote its position, are wanting. A slightly webbed appearance is given to the fingers by an increased development of the interphalangeal folds of skin. The hand itself is quite short, broad, and thick.

With regard to the organs of generation, there is a slight malformation of the penis, the urethral aperture being more open than usual, thus approximating to hypospadias. The frenum is wanting. The testicles have not descended into the scrotum, and cannot be distinguished in the groin.

The position generally assumed by these children is peculiar, and may well be compared to that of some of the Simian tribe. The head, particularly in the boy, is thrown forward, as if placed more in advance on the spine than usual. This is accompanied with a slight stoop of the shoulders, and bending of the knees, the whole attitude being well delineated in the accompanying graphic sketches by Dr. Dalton. (See Plates I. and II.) The motion is unsteady, as in the tribe of animals already referred to, the boy having a swinging gait, not unlike that of a person slightly intoxicated.

The measurements of some parts of the body and skeleton are as follows:

Boy.—Height	33¾	inches.	
Spine	16	"	
Arm (humerus)	6¾	"	
Forearm	5½	"	
Hand, length	4	"	Breadth 2¼ inches.
Femur	9	"	
Tibia	7½	"	
Left lower extremity	17½	"	Foot 5 inches.
Circumference of chest	18¼	"	
" waist	17	"	
" pelvis	17	"	
Head.—Circumference over hair and scalp	13	"	
Antero-posterior diameter	4¼	"	
Bi-temporal " not quite	4	"	
From one auditory passage to the other, around the forehead	7½	"	
Do. over top of head	8	"	
Do. around the occiput	5¼	"	
Fronto-occipital curve	8	"	
Ear	2	"	
Facial angle	60	"	

The measures of the head were taken over the hair, and of course include the scalp, so that, if allowance be made for these, the actual measurement of the bone would be at least an inch less in the circumference of the head, and proportionately in the others.

The following is the state of dentition in the boy, being in part anomalous. The first four permanent molars, which appear between six or seven years of age, are present.

Upper Jaw.—2 Permanent molars.
3 of the deciduous molars—one on the left, two on the right, having lost one since he has been here.
2 Cuspidati, both probably of first set.
2 Lateral incisors, deciduous.

Lower Jaw.—2 Permanent molars.
2 Deciduous molars.
2 Permanent central incisors.
2 Lateral incisors.

On the left side of the lower jaw, in the place of the cuspidatus, is a large worn tooth, similar to a molar of the first set, and which might easily be taken for one; there is no corresponding tooth on the other side, the cuspidatus being wanting, and the first milk molar coming next to the lateral incisor.

The pulse, observed at different times, varied from 80 to 100, irregular in rhythm, much increased on the slightest exertion.

Girl.—Pulse regular, from 80 to 90. Resp. 20.

Height	29½	inches.	
Spine	15½	"	
Humerus	6	"	
Ulna	5	"	
Hand	4	"	
Lower extremity	15	"	Foot, 4½ inches.
Circumference of chest	19	"	
" waist	16	"	
" pelvis	16	"	
Head	13	"	in circumference.
Antero-posterior diameter	4½	"	
Lateral "	3¾	"	
Over top of head, from one auditory passage to the other	8	"	
Ear	1¾	"	
Facial angle	65	"	

Teeth, 10 in each jaw, deciduous, normal; all perfectly sound and white.

Third toe short, same length as fourth.

It may not be uninteresting to state that these children were vaccinated, first the boy, and eight days after the girl was vaccinated from her brother. The disease took well, and went through the usual normal stages. About three weeks after the vaccination, both were attacked on the same day with chicken pox, which pursued a perfectly regular course, and was unattended with any strongly-marked constitutional symptoms.

A question naturally arises to an observer first visiting these beings, whether they belong to the human species, and it is only after the eye becomes accustomed to their appearance that the brotherhood is acknowledged.

I will not here enter into a description of their appearance: it is rather agreeable, in a degree intelligent, and with nothing repulsive, as would be expected in the usual abnormal specimens of the human race. They are both quite apt to comprehend what is said to them, particularly if accompanied by appropriate gestures, although any continued conversation evidently could not be understood. They are, in fact, without any language of their own. They seem to acquire words readily, and since their sojourn in Boston, have learned to repeat a number, such as "Papa," "Mamma," "Ellen," "Take care," &c., and evidently are capable of instruction to a limited extent. They are quite imitative, and in this respect nothing escapes them. With regard to any communication by signs or language which they may have with each other, it appears to be at present not much greater than what might be expected from two intelligent individuals of the canine race, although in the expression of their feelings they occasionally make use of an unintelligible jargon of

sounds together, which by some might be interpreted as an attempt at language.

As to their habits, they are those of children of two or three years of age, requiring the care of superiors to feed and clothe them. The propensity to constant feeding may also be considered as remarkable, and although at present under the intelligent management of the person who has them in charge, their diet and regimen have been reduced to a system; yet, if left to their own inclinations, they would undoubtedly keep themselves filled with food. With the exception of a catarrhal affection, which might be expected from their exposure to a cold climate, their health seems good; and their strength, as manifested by an almost incessant movement from morning till night, is not to be complained of.

The most remarkable point of interest in these children is the size of the head, and in this respect, considering the amount of intelligence, they are the smallest which have come under my observation. For the sake of comparison, I propose to give the measurements of some very small heads, those belonging to infants, idiotic children, and also the heads of the quadrumana, who most nearly approximate to man; this method, apparently, being the best adapted to place the present specimens in a striking point of view.

It has already been stated that the heads of these children are about thirteen inches in circumference, and if the hair and scalp be allowed for in the measurement, an inch may be deducted, making them twelve. The antero-posterior diameter is four and one fourth, bi-temporal about four.

The head of an infant at birth was as follows:—

Ant.-post. diameter - - - - -	4¼ inches.
Bi-temporal - - - - - -	3¾ "
Circumference - - - - - -	13½ "
Over top of head from ear to ear -	8 "
Occipito-frontal - - - - - -	8¼ "

A girl four and a half years old—

Circumference - - - - -	20 "
Occipito-frontal - - - - -	13 "
Over head from ear to ear - - -	13 "

A boy nine years old—

Twenty-two inches in circumference.

Head of an idiot child from Spurzheim's collection—

Circumference - - - - -	14 inches.
Ant.-post. diameter - - - -	5 "
Bi-temporal - - - - -	3¾ "
Over top of head - - - -	7½ "

Head of the remarkable dwarf Babet Schreier, of whom a description will be given below, thirteen inches, four lines, measured over the most prominent parts of the forehead and occiput.

Idiot boy, ten years old, with a small head, forty-eight inches high—
Circumference of head, over hair, 15¾ inches.
Young chimpanzee, twenty-six inches high—
Circumference of head, 13 inches.
Head of adult chimpanzee—

Ant.-post. diameter	4½ inches.
Over top of head from ear to ear	8 "
Occipito-frontal	7½ "
Circumference	13 "

Young orang-outang—

Circumference	13 inches.
Ant.-post. diam.	4½ "
Lateral "	3¾ "
Curve over top of head from ear to ear	8 "
Occipito-frontal curve	7½ "

For the further illustration of this point, we will adduce the instance recorded by Pinel, in his "Treatise on Mental Alienation," as exemplifying "that degree of idiocy which is the extreme limit of human degradation, in which even instinct no longer exists." This sketch is accompanied by "a design of the cranium of the female idiot, who was at the Salpêtrière in 1805." She resembled the sheep both in her tastes, her mode of life, and the form of her head. She had an aversion to meat, and ate with avidity both fruit and roots; drinking nothing but water. Her demonstrations of sensibility, of joy and grief, were limited to the words, imperfectly articulated, "Bé," "Matate." She would alternately flex and extend the head, and rub it against the breast of her nurse. If she desired to resist or express her dissatisfaction, she sought to strike with the crown of the head inclined. She was extremely choleric, and many times I saw her in the bath, making efforts to get out, and repeating, in an acute tone, "Bé, bé, bé." The back, loins, and shoulders were covered with flexible black hair from one to two inches in length. She could never be induced to sit in a chair or upon a bench, even to take her food. No sooner was she seated than she slipped down upon the earth, and was accustomed to sleep with her extremities closely gathered about her after the manner of animals. Pinel examined this case, and furnished us with the dimensions of the head of this idiot compared with those of the cranium of a little girl of seven years.

	Idiot of 11 years.	Girl of 7 years.
Length of cranium	5 in. 11	7.08
Breadth	3 " 53	5.11
Depth	5 " 11	6.29

The resemblance these children bear to some of the lower order of animals, especially those of the Simian tribe, is quite remarkable, and we are reminded of Lamarck's theory of the gradual development of the human being from the

lower created orders, and the transformation of quadrumana into the bimana. In regard to their relation to the quadrumana, we observed in the boy an approximation to the frontal crest of the orang; the supra-orbitar ridges, and the parietal and occipital crests of the adult chimpanzee; the projecting jaws, the elongated forearm and its semi-flexed position; finally, the stoop of the whole body, with the air and appearance, forcibly reminds us of the monkey.

It has been thought that, in connection with the description of these children, it will not be found uninteresting to present brief sketches of two or three of the most celebrated dwarfs of whom history furnishes an authentic account, chiefly with a view to display their intellectual development.

Babet Schreier.—This dwarf was six inches in length at birth, and at the age of upwards of seven years, measured only twenty-three. Her weight at birth was a pound and a half; at the age just mentioned, it was eight and a quarter pounds.

"The intellectual functions of this girl are very little developed for one of her age; she has very little more intelligence than a child four years old. Her disposition is good; she is inquisitive, and has considerable power of imitation. If instructed in the principles of education, she would probably learn with ease. She is much more disposed to mirth, and more docile in the afternoon than in the forenoon, and testifies her satisfaction by a more joyful air, and greater pliancy of character.

"Being unaccustomed to fix her attention or to listen to what is said to her, she comprehends with some difficulty, and her judgment, for want of exercise, is slow and perplexed.

"She did not begin to speak until four years of age; but she understands all that is said to her. She actually endeavours to express her ideas, which seem to flow in rapid succession in a kind of German jargon to which she is accustomed, and accompanies her attempts with many gestures. I am convinced, by careful observation, that this little being enjoys the same natural, moral sensibility as any other individual."

We find, in the "*Histoire des Anomalies*" of Saint Hilaire, an historical account of some remarkable dwarfs, and particularly of the celebrated Jeffrey Hudson, Bébé, and Borwilaski.

Jeffrey Hudson was born about the time of Charles I., at Oakham, England; at the age of seven or eight, he was presented in a pie to the queen, his height then being eighteen inches. This stature he retained till about thirty, when he suddenly increased to three feet nine inches. In his character as a courtier and a man, he seems to contradict the inferences of writers of the following ages, that dwarfs "are beings more degraded in the moral than in the physical capacity." For he finally became a captain in the royal army, and after the Restoration returned to England in 1682, where he died at the age of sixty-three years, accused of treason. Perhaps it may not be uninteresting to medical men, in the present state of medical ethics, to find that about 1636 he was sent *to France to procure a midwife for the queen.*

Bebe.—A sketch of Bébé will be found far more interesting in a scientific point of view.—Nicholas Ferry, commonly called Bébé, was born in Novem-

ber, 1741, of parents of the ordinary stature; he was born at the seventh month, after a very remarkable pregnancy; at birth, he measured seven or eight inches, and weighed less than a pound, yet the labour lasted forty-eight hours. It is said that he was carried to church on a plate covered with tow, and a wooden shoe was his cradle. His mouth was too small for the nipple of his mother, and therefore he sucked a goat; he had the small-pox when six months old; at eighteen months he began to speak, but was more than two years before he could walk. At five years of age, he was carefully examined by the physician of the Duchess of Lorraine; he then weighed nine pounds seven ounces (French), and his height was about twenty-two inches, being formed like a young man.

His intellect is represented as feeble; the utmost that could be taught him being to dance and beat time. Of reading, or religion, he had no conception, and after a separation of a fortnight he did not know his mother. He was susceptible of passions, such as desire, anger, and jealousy, and his discourse was without connection, and his ideas confined. At the age of fifteen, he was still lively, gay, and *débonnair;* but puberty wrought a serious change, his health declined, his features lost their smile, and, with every appearance of premature old age, he died June 9th, 1764, at the age of twenty-two and a half.

Skeleton of Bébé.—Ossification perfect.

Cranium greatly depressed between the two parietal and the occipital projections.

Nose projecting.—Nasal bones very large at their lower extremities.

Great toe much elongated.

The principal dimensions of the skeleton were—

Total height		2 feet, 9 inches, 6 lines.	
Length of upper extremities		1 foot, 2 " 9 "	
" humerus - -		7 " 3 "	
Hand - - - -		3 " " "	
Lower extremity - -	1 "	4 " 6 "	
Femur - - - -		9 " " "	
Foot - - - -		4 " " "	

Borwilaski was a Pole, and, like Bébé, of the court. Born at the full time, he was distinguished for his wit and learning. He could read, write, and speak both French and German. The writers of his time call him a perfect but diminutive, and Bébé an imperfect man. When twenty-two years old, Borwilaski was twenty-eight inches high; at this age he was married, and had afterwards several children, well-formed, and of the usual size. The paternity of Borwilaski was not received by all without credulity, even in his own days, and it sometimes gave rise to pleasantries which were supported with courage and patience.

Other dwarfs are mentioned; but I will only refer to the betrothed of Bébé, Theresa Souvray, of about his own age, but with whom his marriage was prevented by death. At the age of seventy-three, she was exhibited in Paris,

appeared chatty and gay, and danced with her sister, two years older, the height of the latter being only three and a half feet.

How far can these children, judging not only from their general size, but also from the smallness of the head, be supposed idiotic? Esquirol, in his "Treatise on Insanity," Am. ed. p. 466, defines the idiotic character at some length, but in a subsequent page does not consider it to depend upon any particular volume or form of the head, notwithstanding it is proper to observe that the smallest heads appertain to the most degraded class of idiots. And again, Gall, in the "Anatomy and Physiology of the Nervous System," has figured two very small crania, and limits intelligence to crania which are only from fourteen to seventeen inches in circumference.

In the report of Dr. Howe, before the Massachusetts State Legislature in 1850, two idiots are compared; the one with the smallest capacity for brain was decidedly more bright, quick, and intelligent than the other. The instance recorded by Pinel has already been given.

From a careful comparison of the observations of different authors with those we have ourselves made and here recorded upon these children, we are disposed to believe that, although of very low mental organization, they cannot be pronounced idiots of the lowest grade. Their senses of sight, hearing, smell, taste, and touch, as well as that of tact, seem complete. Their degree of intelligence has, in our opinion, decidedly improved since their arrival in Boston; and this capacity for education appears far greater than in the lowest idiots.

We need hardly advert to the idea that these singular creatures belong to any peculiar tribe of dwarfs; for it is a fact universally allowed by physiological writers, and expressly laid down by Geoffroy St. Hilaire, that dwarfs are impotent with individuals of ordinary height, and even among themselves, as proved by the experiments made by Catharine de Medicis and the Electress of Brandenburg: "Les plaisirs de l'amour les énervent promptement, et plus souvent leur deviennent funestes. C'est en partie à cette cause que, d'après quelques auteurs, il faut attribuer la vieillesse anticipée, et la mort de Bébé." And in a note he says, "Borwilaski is, at least to my knowledge, the only dwarf who is an exception to this rule. Is an exception in such a matter sufficient to destroy the rule? I can only refer to what has been said above of the paternity of Borwilaski."

[In order to explain some observations in the preceding paper which would otherwise appear obscure, it should be remarked that the children who are the subjects of it were exhibited in Boston as belonging to a race of dwarfs, the descendants of priests from an hitherto undiscovered city in Central America. The peculiar form of their heads, so exactly represented in the Travels of Mr. Stevens, as carved on some of the monuments in that region, and those on some of the Egyptian relics, seemed to favour this idea, as it was supported by a most ingenious and romantic story, descriptive of their discovery and transportation to America. It is now pretty well understood that they belong to some of the mixed tribes of Indians inhabiting Central America, and we hope hereafter to procure some exact details as to the peculiarities of their parents.]

ART. II.—*Case of Gunshot Wound in Left Axilla—Ligature of Left Subclavian, and subsequent Ligatures of Brachial and Subscapular Arteries.* By JOHN WATSON, M. D., Surgeon to the New York Hospital. Reported by WILLIAM H. MORTON, M. D., of Paterson, N. J.

Nov. 25*th*, 1850. Post Van Pelt, of Paterson, N. J., boy, aged fourteen, of good constitution, was accidentally shot in the left axilla. The shot, to the number of twelve or fifteen, entered the axilla nearly at a right angle with the trunk of the body, and separately made but little external laceration. I first saw the patient three-quarters of an hour after the receipt of injury. There had been profuse arterial hemorrhage, which had ceased spontaneously.

Appearance of patient.—Skin cold, pale, and shrunken; pulse in sound extremity feeble and intermitting, and no perceptible pulse in injured arm.

Treatment.—Cold applications, and an anodyne at night.

26*th*. Patient has passed a comfortable night. Pulse in the sound arm 120; and, if not deceived by the pulsation of my own fingers, I detect a slight pulsation at the wrist of the injured extremity. The whole shoulder, arm, and vicinity of wound are much swollen. Cold dressings continued.

28*th*. Pulse 100; pulsation in the injured arm increasing slightly in regularity and fullness; and the swelling has somewhat subsided. The patient complains of no pain. Continue cold dressings.

29*th*. Much about the same; bowels opened by enema.

Dec. 3*d*. Patient improving. The swelling has nearly subsided. The wound is suppurating. The pulse on sound side soft, and beats at 110. Circulation in injured extremity becoming more regular each day. The patient complains of pain in hand and forearm. Ordered poultice of linseed meal to wound.

4*th*. Having left patient's house but a few steps, I was called back, and found considerable arterial hemorrhage, which was controlled at once by pressure over the subclavian artery. During the next thirty-six hours, the hemorrhage recurred five or six times, some four or five pints of blood being lost; which hemorrhages always yielded to compression on subclavian artery. Cold dressings ordered to be reapplied.

5*th*. Pulse on the sound arm 120, and hard; and faint pulsation in the injured arm. I noticed a small tumor forming in axilla of injured side, which proved to be a false aneurism. Tumor increasing rapidly; by night being as large as a goose's egg. On consultation, it was decided to ligature the subclavian artery.

6*th*. Having requested the aid of Dr. Watson, he proceeded to ligature the subclavian artery beyond the scaleni, while the patient was under the influence of ether. At this time the pulse at the wrist was imperceptible, but the aneurismal swelling in the axilla beat strongly. The steps of the

operation need not be detailed further than to say that, before securing the subclavian, the external jugular vein, and a small ascending vessel, probably a branch from the acromial artery, required the application of a ligature; and that very little blood was lost.

I visited the patient four hours after the operation, and found the aneurismal tumor and the swelling in the arm sensibly diminished, and no pulsation to be perceived. Pulse in sound arm 120. Patient in good spirits.

8*th*. Aneurismal tumor burst and discharged a quantity of coagula and semi-fluid blood.

9*th*. Removed the outer dressings from wound made in operation. There was some discharge of grumous blood from this, and no indication of union. Pulse about 130, and hard, with a jerking feel; bowels moved by enema.

12*th*. Patient again improving; pulse better; respiration good; and less excitement about the vessels of the neck. There was a venous hemorrhage to-day from the incision above the clavicle, which ceased spontaneously, and did not return.

15*th*. Again removed dressings; wound looks healthy. The ligatures on the superficial vessels, and the main ligature, remain firm. Pulse 110, and softer.

18*th*. Both wounds suppurating finely. Strong hopes of patient. Four hours after my first visit a profuse hemorrhage occurred. The flow having ceased, its point of issue could not be ascertained, nor could I decide as to whether it was venous or arterial.

19*th*. The hemorrhage again occurred; it was now clearly arterial, and from the original seat of injury in the axilla; it ceased spontaneously. Pulse 120, and jerking.

20*th*. Dr. Watson, being summoned from New York, arrived just in time to witness a third recurrence of the arterial hemorrhage, which was tremendous. Not being able to control it by pressure, and the case admitting no delay for the administration of ether, he made an incision two and a half inches in length below the clavicle in the course of the subclavian artery, and through the pectoral muscles into cavity made by injury in axilla. The seat of hemorrhage not being readily discovered, the cavity was stuffed with pieces of sponge, and an incision about three inches long made in arm over brachial artery, which was found open, but flaccid and dry. It was then tied. The sponges were next carefully removed piece by piece, and we discovered that the repeated hemorrhages *subsequent* to the ligature of the subclavian were not from the lacerated brachial artery on the distal side, but from the channel of communication between the posterior scapular and subscapular arteries, which latter, with its accompanying nerve, lay gaping and much enlarged at the bottom of the cavity. The subscapular artery, which was still bleeding, was finally secured. The axillary artery was found to have been much disorganized by the original injury. A number of shot, lying loose, were scraped out with the other contents of cavity, which now remained dry.

Patient lost by this last hemorrhage nearly two quarts of blood without inducing syncope. After the operation, bandages were placed on the lower extremities, and stimulants administered with the view of supporting the circulation and inducing a vigorous reaction.

21*st.* Patient gradually sinking. Stimulants freely and frequently administered.

22*d.* Patient died this morning, having never rallied from last profuse bleeding. Previous to death, the arm showed symptoms of gangrene.

Autopsy.—The post-mortem examination was confined, by request of the friends of the patient, to the incision above the clavicle. The ligature on the subclavian artery was found loose, and the vessel obliterated some distance each way. (The superficial ligatures had come away previously on the 20th.) Union had taken place to a large extent at the seat of the operation, although there was a sinus along the course of the artery, terminating at the original seat of injury in axilla. Arm extensively gangrenous.

Remarks.—This case presents analogous features to one of Dr. Mott's, with the exception of the difficulties arising subsequent to the ligature of the subclavian artery—difficulties caused by the enormous sloughing process in the original wound. We would not have been justified in enlarging the wound, and tying both ends of the injured axillary artery, and the result of the case shows that such a procedure would have been of no service. The diagnosis was at first difficult, both as to vessel and extent to which the vessel was injured. Certainly the indications pointed out the axillary artery; but might not the injury of a minor vessel, with the profuse hemorrhage and shock to system, have produced the same symptoms? Again, hemorrhage had ceased upon my seeing patient, and pulse returned in a few hours (but feebly and intermittingly, indeed). And would ligatures upon both ends of bleeding vessel have prevented the terrible disorganization of the parts?

It will be perceived that the secondary hemorrhage prior to the operation took place on the 4th of December, eight days after the receipt of injury; and one day intervened between the first hemorrhage and the ligature of the subclavian. This delay was unavoidable. It will also be remarked that, during all these repeated bleedings, even up to the last operation, the pulse varied but little; and patient's strength, courage, and spirits remained good. Both operations were performed under great deficiency of light, so much so that the last required the aid of a candle. The venous hemorrhage, mentioned as occurring on the 12th, probably arose from the divided end of the external jugular, from loosening of the ligature.

Guthrie says that, "when there is a wounded artery which has been duly secured above and below the wound, or when there is an artery in a state from which it may be feared blood may flow, from any or whatsoever cause, the patient should never be allowed to stir from the recumbent position until the external wound has healed;" a precept which was most reli-

giously observed in this case. The last hemorrhages were brought on by the slight exertions made in micturating.

The "operation" on the subclavian ought to be considered successful, so far as that vessel was concerned, the patient being carried off by causes not altogether unforeseen, but unavoidable and totally unconnected with the ligaturing of the vessel. Dr. Watson says, "he regrets we did not resort to transfusion of blood immediately after checking the flow at the last operation." It certainly was worthy of trial, but I have some doubts as to the benefits that would have been derived from it; for the circulation having been but feeble in the injured arm from the day of the injury, and that circulation being still further diminished by last operation, leaving only the small acromial and the capillary circulation for the nourishment of the arm, gangrene was to be expected, and it did make its appearance; to check which, had the patient survived, would probably have required amputation at the shoudler-joint.

ART. III.—*Observations on the Dumb-Bell Urinary Deposit.* By JOHN BACON, Jr., M. D. (Read before the Boston Society for Medical Observation, December 16th, 1850.)

THE remarkable crystalline bodies, first described by Dr. Golding Bird, in 1842, under the name of *dumb-bells* (see *Guy's Hospital Reports*, vol. vii.), are among the rarer forms of urinary deposit. Their nature has never been satisfactorily determined. They always occur alternately with the octohedra of oxalate of lime, or mixed with them; and were regarded by Dr. Bird as zeolitic crystals of that salt. The term *zeolitic* is derived from the zeolites, a family of minerals which frequently form compact spherical masses made up of radiating acicular crystals. In the *American Journal of the Medical Sciences*, for July, 1850, is an article on the dumb-bells, by Dr. Frick, of Baltimore, in which he endeavours to prove that they consist of uric acid. The question as to their chemical composition is not only one of scientific interest, but of practical importance in its bearing on the treatment of oxaluria, an affection which is probably much more frequent than is generally supposed. A fine specimen of the deposit, for which I am indebted to Dr. Dalton, of Boston, has enabled me to make a microscopic examination, and a partial analysis.

In this specimen, the dumb-bells are mixed with octohedral crystals of oxalate of lime, generally very small, and some epithelium cells. They were prepared for examination by allowing the urine containing them to stand an hour or two, as the deposit subsides slowly; and after pouring off nearly the whole

fluid, adding distilled water to the remainder. After another interval of repose, this process was repeated; first with water, and subsequently with dilute alcohol, in which the deposit falls more readily, until the last portions left no stain when evaporated on a slip of glass. Both the dumb-bells and octohedra are insoluble in water and in alcohol.

I. *Microscopic Characters of the Dumb-bells.*—The microscope employed is a very excellent one, made by Charles A. Spencer, of Canastota, N. Y. I have since repeated the observations on mounted specimens, with a first-class microscope recently made by Nachet, of Paris, with the same results.

The dumb-bells, mounted dry, and examined by reflected light, are yellowish-white and semi-transparent, with a pearly lustre. The surface is slightly roughened by minute tubercular projections. In Canada balsam or in water, they appear by transmitted light nearly transparent and free from colour, excepting a yellow tinge. The general form is that of a dumb-bell. Many specimens have the shape of two kidneys with their concave surfaces opposed and connected by a short band. This form passes into that of a nearly circular body composed of two semicircles, nearly or quite in contact, but united only by a narrow neck. Every intermediate form between this and the dumb-bell can be found. There are also nearly circular bodies made up of four quadrants, united at the centre.

The striæ described by Dr. Bird are readily seen. They radiate in two general and opposite directions from a central point in the neck of the dumb-bell, and run without interruption to the surface of the heads, which is slightly tuberculated, but shows no projecting crystalline points. The striæ are composed of exceedingly fine and close lines, and become more and more curved, as they are farther from the axis of the dumb-bell. Besides the striæ, there are faint concentric bands parallel to the outline of the heads, and generally at right angles to the striæ. These are marked by lighter and darker shades of colouring, and are most distinct near the exterior. Usually four or five are visible; sometimes as many as eight. They are present in the small specimens, as well as the large, and can sometimes be traced nearly to the neck of the dumb-bell. In the nearly circular bodies, they have the same characters. They probably indicate successive deposits, or interruptions in the process of formation, like the concentric layers in calculi, which often exhibit a radiated structure also. The striated portion of the neck is generally surrounded by a more transparent substance, showing no structure, which fills up more or less of the interval between the heads. Specimens examined in the urine itself had the same characters.

The above is the appearance of the dumb-bells in their usual position. In thick and fluid Canada balsam, they can be rolled over and examined in different positions. In a side view, the general outline is oval, the very transparent substance nearly or quite filling the space between the heads, which are considerably narrower than when seen in front. The striated portion pre-

sents the figure of an hour-glass, the striæ diverging from a central point within the transparent envelop. The concentric bands present the same appearance as in a front view. The heads are not spherical, but considerably flattened, and the end view of the dumb-bells is oval, but they cannot be retained in this position long enough to be clearly seen. Some of the specimens mounted in solid Canada balsam show an oval figure, with striæ diverging in every direction from the centre, and are probably dumb-bells seen endwise. The nearly circular bodies appear as spheroids more or less flattened, in a side view.

II. *Size of the Dumb-bells and Octohedra.*—The dumb-bells in this specimen are considerably larger than those measured by Dr. Bird. In the following table, are given his measurements, in fractions of an English inch (taken from his work on "Urinary Deposits"), for comparison with mine. The first column of figures is Dr. Bird's, and the second my own measurements.

Long diameter of large dumb-bells,	$\frac{1}{303}$	$\frac{1}{423}$
Short diameter of ditto,	$\frac{1}{750}$	$\frac{1}{634}$
Diameter of some nearly circular bodies,	$\frac{1}{500}$	$\frac{1}{513}$
Long diameter of smallest dumb-bells,	$\frac{1}{1428}$	$\frac{1}{940}$
Short diameter of ditto,	$\frac{1}{2500}$	$\frac{1}{1361}$
Length of a side of largest octohedra,	$\frac{1}{750}$	$\frac{1}{570}$
" " smallest octohedra,	$\frac{1}{3000}$	$\frac{1}{7700}$

There are very few large octohedral crystals in this specimen; their average size is about $\frac{1}{1000}$th of an inch. My measurements were made with both an English and a French micrometer, which agreed very nearly.

III. *Action of the Dumb-bells on Polarized Light.*—Examined by the polarizing attachment of a Chevallier microscope (consisting of two Nicol's prisms), the dumb-bells appear brilliantly illuminated on the dark field, exerting a powerful action on the polarized light. The heads exhibit concentric coloured bands traversed by a dark cross, an appearance commonly presented by groups of radiating acicular crystals. These coloured bands are most distinct near the exterior, and do not appear to coincide with the structural bands seen in ordinary light. The transparent substance investing the neck polarizes feebly. In the side view, an oval coloured band is seen near the outside of the dumb-bell, and the hour-glass striated portion is distinctly visible within its transparent envelop. The oval bodies which I suppose to be dumb-bells, seen endwise, show one or two nearly circular coloured rings near the centre, and an oval band near the outside. The nearly circular bodies exhibit concentric coloured bands within each segment, and are traversed like the dumb-bells by a dark cross. When the field is made bright by revolving one of the Nicol's prisms 90°, the cross becomes white, and the coloured bands are faintly visible, their colours being complementary to those exhibited on a dark ground.

The accompanying octohedral crystals are nearly invisible on the dark field, exerting little or no action on polarized light.

IV. *Chemical Reactions of the Dumb-bells.*—The dumb-bells were submitted to the microscope without separation from the accompanying octohedra and epithelium cells. For the micro-chemical examination, they were freed from them as far as possible by diffusing the deposit in water in a watch-glass. A rotatory motion being given, the water was poured off as soon as the dumb-bells had settled to the bottom. Being larger and apparently heavier, they subside more quickly than the rest of the deposit. The few remaining octohedra were nearly all picked out under the microscope.

Experiment 1.—The dumb-bells, heated over a spirit lamp, on a slip of the thin glass used for covering microscopic objects, darken and finally become white again at a low red heat. Under the microscope, they are now opaque, but preserve their shape perfectly. The residue is insoluble in water, as before heating. In dilute acetic acid, it dissolves with effervescence. The solution, supersaturated by ammonia, gives no precipitate. Solution of oxalate of ammonia being added, a white granular precipitate falls, and, after some time, small octohedral crystals appear in the solution.

Experiment 2.—Heated before the blowpipe, on a strip of platinum foil, the dumb-bells become opaque and retain their shape without sign of fusion, even at a full white heat. A pointed slip of reddened litmus paper being moistened and brought in contact with a little heap of the ignited dumb-bells, its blue colour is restored at the tip. Dilute acetic acid dissolves the residue without effervescence. The solution gives with oxalate of ammonia a white precipitate composed of very minute octohedra.

Experiment 3.—Dilute acetic acid does not dissolve the dumb-bells. In tolerably strong acetic acid (containing 39 per cent. of glacial acid), they become very pale and transparent, the transparency commencing at the surface, and slowly penetrating to the centre of the heads. The striæ and concentric bands all disappear, and a transparent substance is left, which retains the form of the dumb-bell for a while. In half an hour, complete solution is effected. The solution, left to spontaneous evaporation, deposits an abundance of zeolitic forms. They are mostly circular, and are generally composed of two semicircular bodies united by a narrow neck. Every intermediate form exists between this and the dumb-bell, of which there are many small specimens. All these bodies exhibit fine radiating striæ, but none of the concentric layers present in the original dumb-bells; nor have they the transparent substance investing the neck. There are some small oblong bodies composed of two oval zeolitic forms united by a transparent substance; sometimes four of these ovals are connected in the shape of a cross. In polarized light, all these bodies exhibit the coloured rings and dark cross more distinctly than the original dumb-bells, forming splendid objects for the polarizing microscope. Mixed with the zeolitic forms, are a few groups of long four-sided prisms,

which polarize rather strongly. The result of this experiment is in perfect agreement with Dr. Bird's supposition, that the dumb-bells are zeolitic groups of crystals.

Experiment 4.—In dilute hydrochloric acid, the dumb-bells dissolve slowly and completely. The solution, on spontaneous evaporation, leaves groups of thin rhomboidal plates, very transparent, and polarizing powerfully. The rhomboids are often very long and arranged in stellate groups. These crystals are permanent in the air, and retain their transparency when thoroughly dried by a moderate heat. At a temperature above 200° F., they become opaque and white. In water, they instantly become opaque, retaining their form more or less completely. The water reddens litmus paper; and when heated in a concavity in a glass slide, covered by a slip of glass moistened with a solution of nitrate of silver, a white cloud appears in the silver solution, which is insoluble in nitric acid, but instantly disappears on adding an excess of ammonia. This reaction proves that the rhomboids contain hydrochloric acid in combination. They are readily soluble in acetic or hydrochloric acid.

Experiment 5.—In strong hydrochloric acid, the dumb-bells dissolve readily. By spontaneous evaporation, many transparent rhomboidal tables, often in groups, are deposited; resembling those from dilute hydrochloric acid, and polarizing powerfully. There are also a few octohedra, which do not act on polarized light; and some small zeolitic bodies. These are mostly circular, and have the same characters as those deposited from the solution in acetic acid.

Experiment 6.—The dumb-bells, placed in a cold saturated solution of carbonate of soda (covered to prevent evaporation), gradually become opaque, and in a few hours disintegrated, while a white granular precipitate forms around them. The clear solution being poured off, and the precipitate washed with distilled water, to remove the remaining carbonate of soda, it dissolves with effervescence in dilute acetic acid, leaving a few partially decomposed dumb-bells. The acetic solution, neutralized by aqua ammoniæ, yields a white granular precipitate with oxalate of ammonia, proving the precipitate from the carbonate of soda solution to be carbonate of lime.

Experiment 7.—The carbonate of soda solution (Exp. 6) should contain the acid of the dumb-bells in combination with soda. Left to spontaneous evaporation, it affords small stellate and foliaceous groups of crystals, mixed with large isolated crystals of carbonate of soda. The whole deposit re-dissolves in water. Neutralized by nitric acid, the solution gives with nitrate of silver a white precipitate, soluble in ammonia and in nitric acid. This precipitate fails to give the characteristic reaction of oxalate of silver, which should fulminate faintly and be dispersed, when suddenly heated after thorough drying; but its quantity is too minute to render the trial satisfactory.

The small amount of the deposit in my possession was now exhausted. Experiments 1 and 2 prove that the dumb-bells consist of a salt of lime, convertible by a moderate heat into the carbonate, and of course by a high

heat into caustic lime. The other reactions indicate that the lime is combined either with oxalic acid, or an organic acid nearly related to it. Octohedra, and prisms which appear to be oxalate of lime, are obtained from the hydrochloric and acetic solutions. The manner in which the dumb-bells are first penetrated, and then dissolved by strong acetic acid (Experiment 3), suggests the idea that they may contain organic matter, either as a constituent of the compound (from which it is set free by acetic acid), or mechanically intermixed with the acicular crystals which make up the zeolitic group. The acid appeared to dissolve out the salt of lime, leaving an amorphous substance of great tenuity, and less readily attacked by it. The solution did not dry up completely when the zeolitic bodies were deposited, but remained viscid after being kept for twelve hours in a closed vessel with caustic lime. Groups of acicular crystals are very liable to retain some of the substances among which they are formed, and especially in crystallizing from the urine. I have obtained tufts of acicular crystals of phosphate of lime from urine, which, after careful washing, retained organic matter enough to blacken and evolve a strong odour when heated before the blowpipe. The quantity of the dumb-bells which I exposed to heat was very small, and no odour was perceived, nor any greater blackening than is usual with pure oxalate of lime. Some of the reactions obtained are not known as belonging to oxalate of lime, and I proceeded to make some comparative micro-chemical experiments with that substance.

V. *Chemical Reactions of Oxalate of Lime.*—Pure oxalate of lime was prepared by adding oxalate of ammonia to a solution of chloride of calcium, and washing the precipitate thoroughly.

Experiment 8.—Oxalate of lime dissolves in very small proportion in dilute acetic acid, which leaves on evaporation a minute granular deposit. In acetic acid containing thirty per cent. of glacial acid, it is more soluble, a few circular zeolitic bodies appearing on evaporation. Acid of thirty-nine per cent. slowly dissolves a considerable amount, and when evaporated rapidly by a moderate heat, leaves circular zeolitic bodies, showing the radiating striæ finely, and giving the characteristic coloured rings and dark cross in polarized light. The circles are generally fissured in a radial direction in one or two places, as if they had contained water or acid when formed, and had contracted on drying. They sometimes show two or three concentric layers, proving that these may be formed in a short time, even in a few minutes. The octohedral crystals of oxalate of lime which accompany the dumb-bells in the urinary deposit are slowly dissolved by strong acetic acid.

Experiment 9.—A solution of oxalate of lime in strong hydrochloric acid, evaporated rapidly, leaves an abundance of zeolitic forms like those from the acetic acid solution. By spontaneous evaporation it yields transparent rhomboidal plates, often in groups; small octohedra and four-sided prisms, which last are sometimes in rosettes, and numerous zeolitic forms. The rhomboids

and zeolitic groups polarize finely, the prisms less strongly, and the octohedra not at all. In water the prisms and octohedra, as well as the zeolitic bodies, remain unaltered. The rhomboidal crystals retain their transparency when thoroughly dried, but become white and opaque on exposure to a considerable heat. They are not deliquescent, as would be the case if any chloride of calcium were formed. In water they instantly become opaque and granular, but do not dissolve. Their angles become rounded, and minute octohedra gradually appear in the water around them. In nitric acid they dissolve readily, and nitrate of silver produces a white flocculent precipitate of chloride in the solution, proving that these crystals contain hydrochloric acid combined with oxalate of lime, the combination being so feeble that the addition of water is sufficient to break it up. The prisms and octohedra appear to be pure oxalate of lime. A solution of oxalate of lime in dilute hydrochloric acid leaves, on spontaneous evaporation, rhomboidal plates, octohedra, and prisms, but no zeolitic forms.

Experiment 10.—Pulverized oxalate of lime being added to a saturated solution of carbonate of soda, and allowed to stand four hours in the cold, the deposit, which had become semi-transparent and crystalline, was separated by a filter from the solution, and washed. Dilute acetic acid now dissolves more than one-half of it with active effervescence, the residue being undecomposed oxalate of lime. The filtered carbonate of soda solution, neutralized by nitric acid, gives with nitrate of silver an abundant white precipitate, readily soluble in nitric acid and in aqua ammoniæ. This precipitate, collected and dried, is dispersed with a faint report and a puff of smoke when suddenly heated on platinum foil. This is a characteristic reaction of oxalate of silver, and proves that a solution of carbonate of soda is able to decompose oxalate of lime without the aid of heat, giving rise to insoluble carbonate of lime and soluble oxalate of soda.

These experiments show that oxalate of lime, contrary to the usual statement, is soluble in strong acetic acid, and that it forms a crystalline compound with hydrochloric acid. When rapidly deposited from solution, it affords zeolitic forms similar to those obtained from the dumb-bells. By the slow evaporation of a strong solution, zeolitic groups mixed with crystals are deposited. A dilute solution, slowly evaporated, yields crystals only. These crystals resemble in appearance and in their reactions those obtained from the dumb-bells.

It is probable that many substances may assume the zeolitic form of crystallization, and even the dumb-bell variety of that form. Griffith, in his "Manual on the Blood and Urine," figures dumb-bells of oxalate of soda (Plate IV, Fig. 17), also imperfect dumb-bells of uric acid (Plate I, Fig. 12). I have similar forms of phosphate of lime from stale urine, of urate of magnesia and oxalurate of ammonia, which are evidently made up of radiating acicular crystals. The mere external shape is not to be regarded as charac-

teristic, unless the zeolitic structure is present also. Dr. Frick obtained forms similar to the dumb-bells by keeping rhomboidal crystals of uric acid in water for some time, but it does not appear that they acquired the radiated structure, or the polarizing action of the true dumb-bells. The well-known radiated spherical masses of carbonate of lime from the urine of the horse give the zeolitic rings and cross in polarized light. Phosphate of lime, dissolved in strong hydrochloric acid, affords, both by rapid and slow evaporation, circular zeolitic forms, having the characteristic structure and polarizing action. No isolated crystals are obtained from the hydrochloric solution of this salt. The typical zeolitic form is a spherical mass. Under what conditions the peculiar dumb-bell shape is assumed has not been ascertained. The concentric layers which I observed may not be present in all cases.

Since the preceding observations were made, I have seen, in the *London Medical Gazette* of Oct. 25th, 1850, a reply by Dr. Bird to Dr. Frick's article. In this paper, Dr. Bird gives the results of a few recent experiments on dumb-bells obtained from a patient whose urine deposited a large quantity of them, unmixed with other crystals. These experiments, in his opinion, render it probable that they consist of oxalurate of lime, a salt easily convertible into the oxalate; from which it differs only by containing the elements of urea in place of those of water. The following is an abstract of his reasons for this belief: 1st. In their peculiar action on polarized light, and their radiated structure, they present a close resemblance to the crystals of oxalurate of ammonia, while the octohedra of oxalate of lime have no polarizing power. 2d. Water in which dumb-bells were kept for ten days at a temperature which, in the day-time, seldom fell below 85° or 90° (Exp. B.), became turbid, and evolved a fetid ammoniacal odour. Some of the dumb-bells had disappeared, and large octohedra of oxalate of lime, which did not exist previously, were visible. This putrefactive change, with evolution of ammonia, indicates the presence of nitrogen. 3d. The dumb-bells became black, and evolved an odour of burnt horn, when heated in a platinum spoon (Exp. D.), and at a moderate red heat became white. 4th. A solution of the dumb-bells in dilute hydrochloric acid was treated by ammonia (Exp. C.), which produced an amorphous white precipitate. On leaving the whole to spontaneous evaporation, large cubes of sal-ammoniac were obtained, and none of the usual plumose crystals. The cubic form is that assumed by this salt in the presence of urea. 5th. Boiled in strong nitric acid (Exp. F.), the dumb-bells dissolved, and on spontaneous evaporation, large and perfect dumb-bells were deposited from the solution.

In regard to Dr. Bird's argument from the crystalline form, and polarizing action of the dumb-bells, I have shown that oxalate of lime and other salts can be obtained in various zeolitic forms, of which the dumb-bell is one variety. Though the octohedra of oxalate of lime do not act on polarized light, the prismatic crystals of this salt which abound in various plants possess strong

polarizing power. These crystals (known to the botanist under the name of *raphides*) are classed under three general forms, specimens of each of which I have examined in this connection: 1st. Isolated four-sided prisms, usually and perhaps always rhomboidal; 2d, stellate groups of prisms; 3d, acicular crystals, either isolated or in bunches. Isolated prisms from the bark of common hickory, of two species of oak, and of the grape-vine, become strongly coloured in polarized light, and in some positions show concentric coloured bands parallel to the edges of the crystal. Similar crystals occur in the cells of the outer coats of the onion. In a single specimen, I found mixed with the prisms groups of radiated acicular crystals and true zeolitic forms, which gave the characteristic coloured rings and dark cross in polarized light. Whether these bodies consist of oxalate of lime or some other salt, I am unable to say. They have a yellowish colour and show radiating lines distinctly, by which they are readily distinguished from starch granules, which also exhibit a dark cross in polarized light. The stellate groups or rosettes which abound in rhubarb root polarize finely, the projecting faces of the crystals showing coloured bands parallel to the edges. In the pulp of the fig, similar groups of crystals occur, which have the same characters. Acicular raphides from the pith of the grape-vine, and those found in the outer coats of the hyacinth bulb, also in the stem and roots, show fine colours in polarized light. They appear to be very long and slender four-sided prisms. The prismatic crystals obtained by evaporating a solution of the dumb-bells or of oxalate of lime in acids, agree in appearance and polarizing action with those from plants. Octohedra of oxalate of lime sometimes occur in plants. I regard the dumb-bells as made up of very slender prisms, and not of lengthened octohedra, as Dr. Bird supposed.

Dr. Bird's experiments B. and D. indicate the presence of organic matter containing nitrogen, but do not show whether it forms a chemical constituent of the salt of lime, or is mechanically mixed with it. The resolution of the dumb-bells into octohedra of oxalate of lime, observed in Exp. B., may be a re-crystallization of the salt, with separation of the organic matter, or the acid may be decomposed. In Bowman's "Medical Chemistry," it is stated that the dumb-bells are gradually converted into octohedra, if kept for a length of time in any liquid medium. In my fifth experiment, octohedra were deposited from the hydrochloric solution of the dumb-bells. Exp. C. favours Dr. Bird's opinion that the elements of urea are present, but it cannot be regarded as conclusive. It is yet unknown whether sal-ammoniac may not assume the cubic form in presence of other organic substances besides urea. I repeated this experiment with some dumb-bells which had been mounted dry for preservation, and obtained plumose crystals of sal-ammoniac, and no cubes. It is possible that these dumb-bells might have undergone some alteration, as they were exposed to a heat of 200° or more in mounting, and had been kept some time since; but they retained their transparency and other characters.

A dilute solution of oxalurate of ammonia, added to one of chloride of cal-

cium, produces no immediate precipitate, but after some hours numerous zeolitic forms, probably of oxalurate of lime, are deposited. Among them are small dumb-bells, with radiating striæ, but the majority are circular. A part of the solution, left to spontaneous evaporation, deposited large cubes of sal-ammoniac mixed with zeolitic groups. The oxalurate of ammonia employed was not pure, and the zeolitic bodies are coloured, and more or less opaque, but some of them give the characteristic phenomena in polarized light. They are too impure and too small in amount for a satisfactory comparison of their reactions with those of the dumb-bells. Pure oxalurate of lime is stated to form brilliant and colourless crystals, sparingly soluble in water. The dumb-bells from urine are not attacked by water, unless macerated in it for a long time.

Dr. Bird concludes, from Exp. F., that the dumb-bells are not decomposed by boiling in strong nitric acid; but they might give this result if they consisted of oxalate of lime, or were converted into that salt by the nitric acid. A solution of oxalate of lime in strong nitric acid affords fine zeolitic forms by rapid evaporation. If these are re-dissolved in strong acid, and the solution boiled and evaporated, they are again deposited with the same characters. The residue is not deliquescent, as would be the case if any nitrate of lime were formed.

The preceding observations prove that the dumb-bells consist of a salt of lime, containing either oxalic, oxaluric, or perhaps some other organic acid easily converted into the oxalic; but the exact nature of the acid remains to be determined by future investigation.

ART. IV.—*On some of the Remote Effects of Injuries of Nerves.* By CHARLES W. PARSONS, M. D.* [Read before the Rhode Island Medical Society, Providence, December 18th, 1850.]

A SOMEWHAT peculiar case, which fell under my notice during the present year, first led me to make inquiries into similar facts; and I will begin by relating it in detail, and afterwards give an account of other cases which seem to be allied to it. No apology can be required for minuteness in the report of a case. Every one of you probably has been disappointed by finding that only those parts of a medical observation were recorded which the writer's own theoretical views made important, to the neglect of points which would be most essential in answering a hundred different questions that would first occur to other minds.

* The writer would be very sorry to have it thought that he offers this article as a complete essay on the subject. The hasty notice of many topics, and some peculiarities in its style, may be excused by the fact that it was intended to be read before a Society, and is published only in accordance with a special vote requesting it.

A young woman employed in a factory, aged 17, large for her age, of nervous temperament, had been rather delicate in health. She had convulsive attacks in childhood; and no serious sickness since. The catamenia were never regularly established till two or three months before the following narrative begins.

On Sunday evening, February 17th, 1850, she thrust the point of a pair of scissors into the left thumb, on the radial side, just over the root of the first bone of the thumb. The wound was slight, and caused little bleeding, but severe pain. She nearly fainted away. Some *salve* was applied, and the wound healed in a few days, but some pain and swelling remained about the thumb. She used cold emollient poultices, till on Saturday morning, the 23d, she put on warm fomentations of wild indigo, at the recommendation of an old woman. That day she had for the first time pain and swelling up the arm. About this time she had some pain in the back of the head and neck. She could not raise the thumb; it lay bent over into the palm of the hand. About March 1st, her catamenia appeared, and she was attacked, a few days after, with a "nervous fever." During this sickness, she was first visited by one of our Fellows, Dr. J. N. Millar, of Fruit-hill. The catamenia lasted only two or three days; during the fever she had headache, but did not complain of any pain in the spine, and had no convulsions; her pulse was exceedingly rapid; she slept well at night. The thumb was swollen and painful about its root; she gained in the power of moving it; there was no open wound. In about two weeks she was convalescent from the fever.

Just as her appetite became restored, she one day saw her mother sit down on a basin of water which was in a chair, and she burst out laughing. The laughing became uncontrollable, and during the day gradually changed to a dry barking cough. This cough continued more or less constant for several weeks. She slept a good deal on some nights, and went through some days in comparative quiet; but at times she had very severe attacks, more severe than hard paroxysms of hooping-cough. After about two weeks, she coughed up green and yellow mucus, and sometimes blood. The thorax and spine became tender to pressure.

I saw her with Dr. Millar, March 31st, and will give my notes of that date. She was able to sit up in bed about half an hour, was cheerful, cheeks flushed, not at all livid. Slept well, last night, under large doses of hyoscyamus. Her cough, while I was there, was almost incessant. One inspiration was followed by from two to seven dry jerking expiratory sounds, reminding one a little of a small dog or frog. Respiratory sounds vesicular, clear and pure, on a hasty examination over the back. Percussion resonant. Respirations 20, pulse 100 in the minute. During the quiet produced by chloroform, the pulse went down to 80. Tongue red, clean, rough. Appetite at times pretty good. Bowels regular. Catamenia have gone through their regular course once since the fever.

Cicatrix on thumb red, a little prominent, like a half pea, very sensitive.

She cries out when I press its centre. Tenderness extends round the thenar eminence; and over metacarpal bone to the wrist. No tenderness, pain, nor red or hard lines up the arm. She cannot abduct the thumb.

Treatment had been very various. Opiates in very large doses had not much effect. Cupping over cervical and upper dorsal vertebræ allayed the cough for a time, but lost its effect by repetition. Inhalations of ether and chloroform stopped the cough while insensibility lasted, and no longer. Carbonate of iron, oxide of zinc, slight mercurialization had no marked effect. A dose of turpentine with castor oil was followed by unusual quiet for a time; a second dose had no obvious effect.

We gave her chloroform; after inhaling about ʒij, she became insensible and still. The cicatrix was then thoroughly cut out, and emollient poultices were applied. Next day she had pain running up to the spine; she had had a quiet night, using large doses of hyoscyamus. This operation had no immediate effect on the cough.

Four weeks after, April 28th, her cough had been growing less incessant and violent; she could converse some, though frequently interrupted; she raised thin serous sputa, bloody mucus, and almost every day some blood. Tenderness of thorax continued. The wound of the operation had healed soon; the cicatrix was not tender, and projected very little. She had used opiates more freely, and become costive; but her appetite was still good.

In a few weeks after this, after using quinine pretty freely, she felt able to leave her chamber, and rapidly improved after changing air. I saw her June 1st; she was able to walk out to the neighbors'; in ten minutes' conversation, she had about six turns of the noisy expiration; they are more frequent after fatigue or mental excitement. She continued to improve, with no marked advantage from treatment, except from change of air and scene and mode of living.

Some time in October, a relapse occurred, of which I cannot give the early history. She had, as before, very severe turns of noisy cough, with scanty mucous and bloody sputa. This lasted three or four weeks. The manner in which it ended is worth noticing; as it looks as if nature attempted a cure by a process resembling that which has sometimes succeeded in the hands of surgeons.

At a time when she had a very severe spasmodic cough, she noticed a soreness in the cicatrix on her thumb; a blister soon rose there, the tenderness and inflammation extended, and soon a dry slough formed, including the original scar. This became black and hard, and peeled out as in some cases of senile gangrene, with no liquid discharge beneath. When this soreness began to attract her notice, her cough was mending a little; but soon after, as the slough separated itself, her cough ceased, and has not troubled her since. She gained rapidly in health. Two days since she had gone to work in the factory, and had nearly gained her usual strength. The thumb pre-

sented a cicatrix, flat, a little red, say an inch long and half an inch wide, with a slightly tender knob at one corner. No tenderness running up the arm. She cannot abduct the thumb; all its other movements are perfect. The hand is colder than the other one.

It is, I think, quite clear that this cough did not proceed from inflammation of the air-passages, and that the discharge of different liquids from the mucous membranes was a secondary result of the convulsions. The cough, as I heard it, was evidently spasmodic, and answered to the description given of *uterine*, or hysterical cough. Sir Charles Bell has described very similar cases, in one of which several physicians spoke for a chance to examine the ulcerations of the larynx after death, but the patient disappointed them by getting well. In another, he was called on to perform laryngotomy. In one nervous young lady, his description is, "a convulsive barking noise like a cough, except that the larynx was alone affected; and there was no conforming action in the pharynx, velum, and lips."

Again, it seems certain that the wound had some agency in causing the symptoms, by an impression of some kind sent up the nerves of the arm. The part wounded certainly contained terminal nervous fibres, which could send an impression to the brain, though unfortunately I cannot say whether any nervous trunk was injured. A branch of the radial nerve was just in the way of the scissors; and we may infer that it was injured, from the immediate pain and subsequent paralysis.

A variety of remarkable symptoms have been found to be produced by injuries of nerves. There is no need of illustrating the effects on those parts to which the injured nerves run. As an ordinary thing, any lesion of a nervous trunk is felt in the parts supplied by it. But the *remote* effects, those which run *up* the course of the nerve, or radiate in *collateral* directions, are less familiar. They consist in disorders of sensation and disorders of motion.

Pain is the most frequent symptom. Very acute pain usually accompanies the injury at the time, and when this immediately follows bleeding, or any wound that is likely to involve a nervous fibre, it should put us on our guard. This very frequently subsides entirely, leaving perhaps some sensitiveness of the part; but either before or after the wound is healed, it returns, shooting up the part, in some instances seating itself along the spine, and in some also running in different distinct directions. It is very often intermittent, recurring sometimes at pretty regular periods, and often in the torturing paroxysms of neuralgia. The fits are apt to be worse at night, and in cold and damp weather. There are very commonly other unpleasant sensations, particularly tenderness on and about the wound or cicatrix, and numb or tingling feelings, running up from this part along the nervous trunks. In one case, besides severe pain in the wounded hand, increased toward evening and in the night, there was extreme tenderness, a feeling of pins and needles in the hands and fingers, most marked in the forefinger and thumb, with pain shooting up the arm,

numbness, and feeling of deadness. This was after a prick of the ball of the thumb in a rather hysterical Irish girl of twenty. The symptoms were believed by the very intelligent surgeon who attended her to be caused by the injury.*

I know a lady of this city who many years ago pricked the thumb near the nail with a needle. Severe symptoms very soon ensued, which confined her a few days to the bed, and seemed to threaten tetanus. Since then, the part has always been extremely sensitive. Picking up a needle with the thumb and forefinger of that hand causes an instant painful thrill running up the arm.

An American girl, rather nervous and delicate, but enjoying tolerable health, three years ago, at the age of about eighteen, thrust a needle into the palm of the right hand a little below the pisiform bone. A piece of the needle nearly an inch long broke off, and was extracted with much difficulty, the surgeon having to work an hour over it. In a day or two, she had pain and swelling of the arm. It was red; whether in streaks or not is uncertain. Pain in axilla; it is not known whether the axillary glands were swelled. Inability to move the arm; she carried it bent, and applied against the chest. In some five or six days the swelling subsided, but not the pain. She had then an attack of erysipelas on the right side of the face, not down the neck. As this passed off, more than a fortnight after the injury, she had trismus and stiffness of the neck; could not open the mouth for about twenty-four hours. Some stiffness remained for a longer time. Her pains became more severe, and extended up the ulnar side of the arm to the right axilla, and thence crossed, both below and above the mammary gland, to the region of the heart. These pains returned daily, and were very severe. She has had some ever since. Is subject at times to palpitation of the heart. The fingers at times are sore and swollen. For about six months after the injury she was confined much of the time to her bed. Toward the close of this period, numbness in the arm also came on, and some paralysis of the face, so that the features were drawn to one side. Her pains are worse when her general health is impaired; they are increased or brought on by fatigue; but rather relieved by mental occupation and pleasant excitements. Her health has been gradually improving, and the neuralgia growing less severe; within six months there has been a great amendment. She has been treated by mesmerism, homœopathy, electricity, &c., but the improvement seems to have been gradual, and uninfluenced by remedies.†

In an instance related by Swan, after a cut on the thumb, there were numb feelings and feelings of "fullness" up the arm for about two weeks. After

* Article on some Effects resulting from Wounds of Nerves, by John Hamilton, *Dublin Jour. Med. Science*, March, 1838.

† These facts are taken from the statements of herself and her friends; the dates are of course uncertain. I am indebted for the facts to the kindness of Dr. James W. C. Ely, of Providence.

the wound had healed, pains came on, which extended over the whole body, especially the upper part, in severe paroxysms, with trembling, but no muscular spasm. The pain was sometimes compared to pinching with hot iron, or hot water poured down the back. After seven years, a gradual improvement had gone on, little influenced, it would seem, by remedies; but there was still an extreme susceptibility. Carrying an umbrella two hours caused a feeling of needles in the hand, pain at the stomach, and headache, lasting a few days.*

Giddiness, temporary loss of sight, nausea, and vomiting, feeling of the teeth being set on edge, have been found to accompany acute pain, following wounds of the upper extremity. The same sympathy of other sensitive nerves with the painful attacks is seen in neuralgia unconnected with injury.

Next in frequency to pain, convulsions of various sorts have been observed, apparently produced by wounds of nerves. The most familiar instances are the twitchings after amputation. When they begin after the wound has nearly or quite healed, these sometimes depend on some nervous fibres being involved in the cicatrix. They have been thought to be worst in operations which left the nerves less perfectly covered, as in the conical stump. In some other cases, convulsions confined to the nerve which had been mechanically irritated have been fatal. In a recent case of Bransby Cooper, ligature of the subclavian artery was followed by severe incessant hacking cough, and in a few days by death. The phrenic nerve was found to be inflamed.

In other instances, the whole injured limb has suffered a great while and very seriously from convulsions, which have made the person's life miserable. In others, the whole body has been affected; and in others again, some particular set of muscles remote from the injured part. I have before me accounts of each of these forms of disease, drawn from journals and from Morgagni's store-house of accurate observations. The treatises of Swan, in England, and Descot of Paris, on local affections of the nerves, are rich in similar narratives.

A young lady was accidentally wounded a little above the wrist, near the radial nerve; and acute pain ensued, which continued with little abatement, extending to the forearm, fingers, and at last up the arm. Convulsive movements then came on in the arm, which resisted the greatest variety of treatment, till three applications of the actual cautery to the scar produced a slough, and complete relief was obtained. She continued well.† Art here accomplished what nature seems to have done in the case I first related in full.

Morgagni tells us of a "noble virgin of Verona," about sixteen years old, who was bitten by a sparrow, on the forefinger. The finger became bent and partly palsied; suppurated, and she had then a fever of some days' length.

* Swan, Dissertation on the Treatment of Morbid Local Affections of Nerves, London, 1820.

† Quoted in Johnson's Med.-Chirurg. Rev., April, 1827, p. 427.

After these symptoms had been removed, a fortnight after the wound, "a sudden tremor, which began first in her feet, and then in her hands, and was from thence propagated through the whole of her body, seized upon the virgin, and brought with it a dangerous and long syncope; on the going off of which, her tremors did not for that reason go off; but, being joined with a groaning, and sometimes with a kind of howling, continued many hours." Attacks like these returned frequently, sixteen or twenty times a day. Whether these attacks, which seem to have been hysterical, were any way connected with the wound may be questioned. Morgagni believed they were; and the history resembles in many points the observation which I related in commencing.

In both the original wound was a puncture, in nearly the same place, over the radial nerve or one of its branches, and healed soon; in both the part was palsied for a time, and then fever ensued. Both patients were of nervous make, and had some catamenial irregularity. Both had some singular affection of the respiratory muscles, the howling and groaning of the one reminding us of the other's barking and croaking.*

When a single set of muscles, distant from the injured part, is the seat of convulsions, the respiratory muscles seem to suffer oftener than any other. An interesting case is reported at length in a late number of the *American Journal of Medical Sciences*.† A young married woman, after pricking her thumb under the nail, had pain and spasm running up to the face and neck; afterward hysterical symptoms, connected probably with the commencement of gestation; and ten months after the injury she gave birth to a dead child, after which she suffered from various wandering painful affections, simulating inflammation. With the earliest attack of this kind, she had "a cough which sounded like the barking of a small dog, of a highly croupy character, without expectoration." As these troubles dated from the time of the trifling injury, we may suppose that this immediately excited the symptoms to which her temperament, and the agreeable stage of family history through which she was passing, made her particularly liable. Such was the opinion of the distinguished physician who had charge of her.

In still another class of cases, the whole spinal cord seems to have been involved, producing affections much more deserving of the name *spinal irritation* than many of those odd hysterical cases where all sorts of bad feelings in the body, accompanied by tenderness in the integuments supplied by the posterior spinal nerves, are very conveniently ascribed to this scapegoat of nervous pathology. *Tetanus* is more frequently caused by the impression made on the system by the reparative efforts of tissues of low vitality, as tendons. But tetanus has in many instances followed wounds of the larger nerves; and in some, related by Larrey and others, the disease was cured by removing the wounded part. Béclard mentions one where the artery that

* Morgagni, on the Seats and Causes of Diseases, &c. Letter LIV.

† October, 1849, reported by Dr. S. P. Hildreth.

accompanies the ischiatic nerve was tied after an amputation. When the wound had nearly healed, fatal tetanus commenced. The sciatic nerve presented at the stump a considerable swelling, containing in its substance a knot of ligature.

Epilepsy has sometimes been cured by removing tumours which pressed on nerves. In one case, the fits were preceded by peculiar feelings running up from the calf of the leg, and a scalpel thrust in two inches deep was so lucky as to hit a body of the size of a pea, as hard as cartilage. This was cut out from among the muscles, and the attacks ceased. Sometimes the *aura* of epilepsy has seemed to set out from a superficial tumour, resembling a cicatrix, which was tender or painful, and on removing which the disease was cured.

I have recently met with the case of a soldier in our Mexican army who had a bullet-wound at the battle of Molino del Rey. The bullet lodged; ten months after this, he had a fit of epilepsy, and for three months after had them every two or three weeks. Dr. Kimball, of Lowell, Massachusetts, cut down and extracted the bullet, which lay "near to, if not in contact with, the sciatic nerve;" close to the ischiatic notch. Up to three months after the operation, when Dr. Kimball reported the case, no fit had occurred.*

It would appear, from a large number of scattered facts, of which I have only given a few specimens, that wounds of nerves sometimes are followed by convulsive movements, either in the very part that is hurt—or in particular parts of the muscular system distant from the injury, particularly the muscles of respiration—or involving the whole frame. These convulsions sometimes appear while the wound remains open too long and inflames, sometimes after it has healed. They are sometimes accompanied by fits of pain, at other times not so. Irritative fever, and the various symptoms of hysteria, occur, in many cases, between the time of injury and the appearance of convulsions. The part often becomes partially paralyzed. The spasms are frequently made worse by cold and damp, and cease during sleep.

A large proportion of these various cases have been in young females, and persons said to be nervous, or hysterical. Yet some occurred in the stronger sex; and a good many of these curious observations are furnished by Baron Larrey, from the battle-ground and camp. Undoubtedly some unknown cause, in the person's previous state, conspires to produce them, or they would not be so rare. Some persons have taken the trouble to try to *prove* that these effects are rare. To show this, they have laid bare and isolated the nerves in living dogs, and then pinched, pulled, cut, torn, and burnt them. It is found that injuries of nerves in inferior animals seldom produce the secondary nervous symptoms we have been describing. But this only illustrates what we all know, that the constitutional symptoms of local injury and reparation are generally less severe in these animals than in man. If

* See Boston Medical and Surgical Journal, Feb. 14, 1849.

such experiments are meant to prove that, in man, nerves are hurt much more frequently than remote convulsive or neuralgic affections are produced, they are at once needless and insufficient.

The wounds to which these consequences have been ascribed were most commonly punctured. After some incised and gunshot wounds, a nerve has been found to be partially divided. This would put the undivided fibres on the stretch, as may be easily shown by experiment. If a nerve be first partly cut across, the fibres will retract but little; on then dividing it completely, the retraction will be immediate and very considerable. Fatal tetanus was caused in one instance by caustic, which the patient applied himself; the nerve beneath (musculo-cutaneus of the arm) was found red and softened for some inches. Foreign bodies in the substance or immediate neighbourhood of nerves—as fragments of bullets, the knot of a surgeon's ligature, the end of a whip-cord, a stick thrust through a hollow tooth—have caused both the painful and convulsive paroxysms. The decayed stumps of teeth act in the same way.

Bleeding at the bend of the arm has sometimes been followed by immediate acute pain, and at a later period by habitual neuralgia or spasmodic attacks. The ill consequences of the wound of venesection most noticed have been the local inflammatory symptoms—particularly inflammation of the cellular tissue, absorbents, veins, and of the fascia connected with the biceps tendon. Some old surgeons, as Benjamin Bell, dwell a good deal on these local inflammations, and seem to confound those of different tissues together. These are all distinct from the nervous affections we are describing, though occasionally combined with them. When the wound of venesection does not heal soon, inflammation ensues in a few days. If the fibres of a nerve are involved, pain runs up the limb, with tenderness. Leeches and cooling lotions have been found to relieve such cases, which are undoubtedly inflammation of the nerve. [See cases related by Swan.]

It is not necessary to point out the analogy between these cases and neuralgia. Those where pain was the chief symptom are merely instances of neuralgia from a probable local cause. The convulsive attacks are quite analogous to those caused by the irritation of teething, and other forms of what Marshall Hall would style eccentric convulsions. They are on some accounts good cases for study, as they throw light on those more obscure instances where the exciting cause is some previous derangement in the bodily functions instead of a visible outward injury. One other disease resembles these facts somewhat. I mean neuroma, or the painful subcutaneous tumour. We have seen that painful and convulsive turns often come on after the wound of a nerve has healed, the scar remaining tender and painful, and appearing to be the centre from which the attacks radiate. Some cases of neuroma seem to have originated in this way. One of the most distressing on record was ascribed to the prick of an awl. These tumours are also much more frequent on exposed parts. But they do not commonly have the struc-

ture of a cicatrix. Most frequently there is a fibrous cyst of small size, containing a firm body, seated near or in the substance of a superficial nerve, and causing, as its chief symptom, intense, intermittent, radiating pain.

I have not sufficient materials to judge of the prognosis in these cases. Mr. Hamilton, of Dublin, says, after relating a number of interesting facts, "All the symptoms, uninfluenced by every remedy made use of, have gradually declined after a long interval, having apparently undergone a natural cure; but in a few instances the termination has been fatal." From the reports I have succeeded in bringing together, it appears that these affections, like many others that begin in irritation, take mainly their own course, and generally tend toward recovery, if placed under good hygienic influences. The painful paroxysms are more frequently rebellious to treatment than the convulsions.

By far the most important remedy for these affections is to cut off the communication between the wounded part and the nervous centres. The wound or cicatrix may be cut out, or destroyed by cautery; the member may be amputated; the nerve may be cut across just above the part injured, or at a distance above this spot, or a part of the nervous trunk may be laid bare and excised. These operations, if performed early, before the irritation extends far, very frequently give relief; but if delayed till the wound has healed, and secondary symptoms have come on, the result is very much less certain. Mr. Mayo, a surgeon of great experience, says that neuralgic pains, immediately succeeding a wound, may be arrested by dividing the wounded nerve above the part injured; but if they commence after the cicatrization of the wound, the chance is that the disease excited in the nerve has extended too far to be relieved by that operation. A number of cases have come under my notice where an operation has relieved pains or spasms months or years after they commenced. The relief has sometimes been instantaneous, at other times more gradual, but in many cases was evidently procured by the operation. I have before me the account of a man who was wounded in the leg by a musket-ball, and eighteen days later, after the wound had healed, began to have some degree of paralysis, with fearful convulsions of the whole body, at intervals. About eight years after the first attack, having been subject to these tormenting paroxysms daily for the greater part of the time, he had a piece of the external popliteal nerve, about two inches in length, cut out, and in a few hours he felt a total change, was composed and tranquil, continued free from the sweatings, palpitations, startings, and shudderings he had had before, and in eight years after had only six or seven much milder attacks.* This is a remarkable instance of an irritation causing disturbance of almost all the nervous functions, and yet, after eight years' continuance, so much dependent on the local lesion as to be substantially cured by destroying the connection between the part and the nervous centres.

* From Descot's *Dissertation sur les Affections Locales des Nerfs*, Paris, 1825. Quoted in Johnson's Med.-Chir. Rev., April 1827.

A lady in this city, many years ago, cut across the end of the forefinger with a sharp knife; the wound did not heal for many days, and some swelling and inflammation followed. About a fortnight after the accident, pains began, which ran up the arm to the shoulder and region of the brachial plexus. After suffering some years in this way, and trying many remedies with no good effect, under the direction of a distinguished Fellow of this Society, now deceased, she had the finger cut across on its palmar surface to the bone. Dr. John C. Warren, who operated, was very far from strongly advising it, and by no means sanguine that any permanent relief would follow. It proved so, however. The last joint of the finger remains a little crooked, the power of using it is impaired; but the pains in the arm, and pricking and tingling in the hand soon disappeared.

Traumatic tetanus has sometimes been cured by removing the wound, or dividing a nerve that was injured. Larrey has furnished several remarkable cases of this kind; and I have just met with a similar fact in the *Dublin Journal of Medical Science*, for August, 1850; and with two reported by an Italian surgeon. In the first-named one, tetanus set in twelve days after a very severe contusion, which left exposed about three inches of the posterior tibial nerve. Next day the symptoms were increasing. Mr. Bransby Cooper then amputated the limb, and the tetanus entirely disappeared. The man died, just a fortnight after, of diffuse inflammation of the cellular tissue.

In the more chronic affections which form the principal subject of this paper, it seems to me that an operation should be advised, when milder measures do not succeed, and there is reason to suppose that an injured nerve, or wound of a part well supplied with nerves, is the cause. But, if there be no tenderness or pain in that part, and no swollen cicatrix, if the fits seem to begin from other parts of the body as well as this, there is more reason to expect harm than good from operating. Such is the recommendation of Pearson and Swan; and such would be my own conclusion from examining a large number of recorded cases.

Since writing the above, I have seen a notice of Dieffenbach's Operative Surgery, in the *British and Foreign Medical Review*, for April, 1846, which states that this eminent practical surgeon takes "a very unfavourable view of the operation under any circumstances. One case of the author, however," it proceeds, "is interesting; very severe neuralgia had followed venesection; the injured nerve was divided, with instant effect, the pains, which had continued for a month, immediately ceasing. A similar case is quoted from Hirsch, in which convulsions and coma accompanied local neuralgia, which were removed by two deep incisions over the wound. But, whether for relief of neuralgia or tetanus, or for any other cause, success is rare; and 'surgery is here under the greatest obligation to physiology for pointing out that the sanguinary path is not the right one.'" This, I would respectfully suggest, is a question for experience, and not for physiology to answer.

The modes of cutting off connection between the injured part and nervous centres will differ in different cases. Mere incision carried across the nerve succeeds sometimes, though the affection may be expected to return in a few weeks. We have just mentioned a case where the relief was permanent. Excision of a piece of nerve sometimes gives only temporary ease. In a boy, near Boston, many years ago, "a portion" of the anterior tibial nerve was cut out, for a most distressing neuralgia caused by injury; how large a portion, I cannot tell; the pains returned some months after. It is impossible to say in a general way how large the interval between the divided ends must be to prevent their reuniting. Ollivier states it at about one inch; but it will of course vary with circumstances.

Decidedly the best results have been obtained by cauterization, which most thoroughly prevents the nervous fibres from reuniting. Larrey employed the hot iron, at a white heat, in many cases of tetanus coming on soon after injury, and with good success. I have before related one remarkable cure of a chronic convulsive affection by the actual cautery.

Benjamin Bell proposed that, in cases of spasm following soon after venesection, the soft parts be very freely and extensively divided down to the bone. His advice, I suspect, has seldom been followed, in a part like the bend of the elbow, where the nerve wounded is usually subcutaneous, while there are large nerves and arteries beneath.

Compression, as by the tourniquet, has sometimes proved very useful as a palliative, actually preventing paroxysms which seemed just coming on. The machines for making more exact pressure on nerves, which were contrived to prevent pain in surgical operations before the days of ether, might be introduced again for the present purpose. The bearing of these facts on the question of a nervous fluid is worth noticing.

The only cases where I have known leeches to be useful are those before alluded to, where a wound remains open, inflames, and is then followed by pain up the limb. In some such cases, the local antiphlogistic course has acted like a charm. Rest is of the highest importance in these instances; motion of the part tending to prevent the wound from healing, and to provoke inflammation. The choice between cooling lotions and warm fomentations must be determined by trial. I should also be induced to follow this local antiphlogistic course, whenever there was tenderness of the cicatrix and up along the course of the nerves.

In one case of long standing, Dr. John C. Warren advised steady, continued dropping of warm water. Rubefacients, as in ordinary neuralgia, are often useful, but by no means reliable. The older surgeons made great use of oily and balsamic applications. We find so sensible a practitioner as Ambrose Paré applying basilicon to a puncture of venesection, followed by acute pain, *for fear the wound should unite*, and afterwards using oil of turpentine, with rectified brandy, and if these should not suffice, proposing to apply boiling oil.

Of other treatment I have very little to say. It should be conducted on the same principles as that of similar affections, neuralgia or spasm, with no known local cause. I suppose the most important points are, to get the patient to breathe as much fresh air as possible, to direct good and nutritious diet, to prevent excitement or fatigues of the mind, to encourage and soothe, without a parade of sympathy, to obviate any functional disturbances, particularly menstrual, and to give tonics as they can be borne, with anodynes only as they are absolutely required. General cold bathing I have known very useful in one severe case in this city. Mercury has sometimes allayed the local inflammatory symptoms, but no more.

The only point of general treatment on which I could have hoped to say anything new is the use of ether or chloroform. In the one case I have reported at length, chloroform completely quieted the spasms, but only for the time. Natural sleep also prevented their return. I have not known a single case of neuralgia, distinctly traceable to injury, which was benefited more than temporarily by these agents. But in other cases of this affection, they have often been useful, not only by procuring an interval of ease, but by putting a stop to the paroxysm. I have more than once seen severe tic douloureux pass off under the influence of chloroform inhaled, and then keep off. Its external use seems to me particularly worth following up. Though not so certain as some remedies, it sometimes acts with surprising quickness and completeness. The union of morphia with it, as practised by the late Dr. J. D. Fisher, increases the probability of permanent good. I have lately known a solution of sulph. morph. gr. x, in chloroform ℥j, as recommended by him, rubbed and laid on the part, to relieve immediately and perfectly severe shooting pains up the arm connected with an irritable ulcer on the finger.* The inhalation of ether in tetanus was tried with sanguine hopes. It has sometimes relieved the spasms and appeared to save life, at other times it has increased them. Its influence on those healthy muscular contractions, like the uterine efforts which depend on the spinal cord as their ganglionic centre, is not uniform; and the causes of this variety are ill understood. These agents have but just begun to show their powers, and experience is as yet various and contradictory on many points, which will at some future time be cleared up. Certainly, however, a mode of treatment which has succeeded in some dozen or score of well-reported cases of tetanus in three or four years fairly deserves to be tried.

This subject is one of scientific, quite as much as practical interest. Yet, though some of us may never meet with facts exactly similar to those we have been considering, it is well for us to be reminded of the rarer forms that disease assumes. The mode in which the system reacts against disturbing causes varies so much in different constitutions as to make an inexhaustible

* M. Dévergie recommends frictions with an ointment chiefly composed of chloroform four parts, to thirty parts of lard. He mentions a case of facial neuralgia permanently cured apparently by inhalation of chloroform.

subject for study. A little puncture, or sudden excitement of feeling, aided by some peculiar impressibility which, perhaps, never showed itself before, may produce speedy death. On the other hand, men have recovered after having the thorax skewered by the shaft of a chaise, or a tamping-iron shot through their brains. The remembrance of such facts will keep us from too great confidence in prognosis—an error which is as easily perceived, and perhaps does a physician as much harm, as any mistake in the actual management of a case.

One other topic suggests itself here. The public do not understand this uncertainty, which springs from the very nature of life. The physician, oftener the surgeon, is sometimes held answerable for a good result, as if he were dealing with mere machinery, governed by the laws of lifeless matter alone. Sometimes the trial by jury, which so many fine things have been said about, is turned into a mockery, that would be simply ridiculous, if it were not grossly arbitrary and unjust. A dozen men, wholly unused to observing disease, unacquainted with the laws even of health, unable to comprehend the difficulties of the subject, bound by the strong ties of caste to bear hard on the professional man, leagued by common ignorance and prejudices and jealousy with the natural bone-setter or Indian doctor who provoked the suit—these, too often, are the "intelligent and impartial" jury, who are to decide what the surgeon ought to have made nature do with a constitution no one knows how much impaired, under injuries whose consequences a Cooper or a Warren would not dare to foretell. This can only be remedied by the gradual spread of general intelligence and information, giving us better juries. But we can lessen the evil by resisting the temptation to run a race with quacks in confident promises. By such a course, we may see cases carried off by other men of more flippant tongues, more ignorant, or less honest. But we shall be less exposed to this unpleasant demonstrative instruction in forensic medicine, and we shall make our calling more truly respectable and useful.

ART. V.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, M. D., Secretary.

Sept. 9, 1850.—*On certain Phenomena connected with Etherization.*—Dr. SAMUEL KNEELAND read the following paper.—It is generally admitted that the condition of etherization is analogous to that of intoxication; the first symptoms being those of stimulation, the following those of narcotism.

The curious fact that sensibility may be destroyed while the intellect is active seems to find an explanation in the view of Dr. Carpenter, "that the

seat of pain, or tactile sensibility, is in the great cephalic ganglia, while the intellectual functions reside in the cerebral lobes."

Longet, from certain cases where, with the usual signs of pain, no pain has been suffered; in other words, where the pain has been *felt*, but not *perceived*, from the supposed affection of the *cerebral lobes* without the *ganglia*—has maintained that in these cases the *lobes* are first affected, contrary to Dr. Carpenter's opinion. These cases of imperfect etherization, as we now know they were, hardly justify his conclusions; for the signs of pain might be equally well considered as *reflex* actions depending on the still preserved integrity of the *true spinal marrow*, which does not appear to be etherized till after the *cerebro-spinal* system.

Flourens, one of the first experimenters on this subject, has given the following as the order in which the nervous system comes under the influence of ether: cerebral lobes, cerebellum, spinal marrow, lastly, the medulla oblongata. It is now evident, from the better understood phenomena, that this order must be somewhat changed, as follows: the cerebellum; cephalic ganglia; true spinal marrow; ganglia of special sense and cerebro-spinal system; and the cerebral lobes last of all—if indeed the latter can ever be fully etherized without fatal results.

M. Pappenheim, in experiments on the structure of nerves which had lost their functions under the influence of ether, says that a very slight alteration may destroy their function; the fluidity of the nervous mass diminishes, and the nerve shrinks and is separated from its sheath. This effect varies with the consistence of the sheath, and the fluidity and chemical nature of its contents. He also discovered that the peripheral fibrils of a nerve may lose their sensibility before the central ones. This may explain why the delicate nerves of the cerebral ganglia should lose their functions sooner than the grosser spinal nerves; in a word, why the functions of the nervous system should be *successively* abolished.

Ether enters the system both through the nerves and blood-vessels. Its influence conveyed by the pulmonary nerves unquestionably produces its primary stimulating effect; while its narcotic effects are produced through the blood-vessels of the lungs.

Flourens has noticed a curious phenomenon connected with ether, which he does not account for. He had proved that ether inhaled by the lungs destroyed sensation before motion; he afterwards found that ether injected into an artery, on the contrary, destroyed motion before sensation. It would not be supposed, *à priori*, that the same agent introduced into the blood at two different points would affect the nervous system in opposite manners. As the course of the circulation in the latter case is in the direction of the *motor* nervous influence, while in the former it is in the direction of the *sensitive* influence, perhaps the phenomena are in this way connected. The injection of ether into the *veins* produces the same effect as its inhalation.

Amussat and others maintain that the insensibility produced by ether and

chloroform depends on *asphyxia*, on insufficient oxygenation of the blood; and that this is proved by the change of the colour of the blood from bright arterial to dark venous, this change always preceding insensibility; though the change is so quickly reversed, that breathing pure air for a few seconds brings back the arterial colour. Ether has been supposed to cause asphyxia by obstructing the endosmosis of oxygen by the capillaries of the lungs to such an extent that an increased supply of oxygen with the ethereal vapour does not retard the period of insensibility. This opinion was strengthened by the fact that the same insensibility could be produced by other gases (not poisonous) improper for respiration, as carbonic acid, nitrogen, hydrogen, nitrous oxide, &c. But we know that the insensibility from ether is not due to a cessation of pulmonary hæmatosis, as an animal may be as quickly and as fully etherized by injecting ethereal vapour into the rectum, or ether into the circulation, the lungs being left perfectly free for the oxygenation of the blood. There is no necessary connection between the dark colour of the arterial blood and ethereal insensibility; if the blood be dark, and there be commencing asphyxia from deficiency of respired oxygen, it is not essential to, and indeed ought never to occur, in the process of etherization; for, though asphyxia be a sure way of causing insensibility, it is not the safe insensibility from ether or chloroform. It would seem that a comparison between the first applications of ether (when many accidents undoubtedly happened from partial asphyxia) and the present method (where a full supply of oxygen is secured) should be sufficient to show that ether has a special and *primitive* action upon the nervous centres, quite different from that produced by gases unfit for respiration; and that, if asphyxia sometimes occur, it is a complication and a *secondary* phenomenon.

Though asphyxia be the result of a deficiency of oxygen, or, what is here equivalent, an undue accumulation of carbon in the blood, there may be a condition, without deficiency of oxygen, and at the same time with an increased supply of carbon, which might be called asphyxia, and which might give a dark colour to the blood. Now, the first condition, asphyxia proper, is fulfilled by the irrespirable gases; the second by ether and chloroform, both of which are rich in carbon, and yet may be introduced to the nervous centres with properly oxygenated blood in the space of twenty seconds. The question here naturally arises, whether the peculiar effects of these agents do not spring from a chemical action of *carbon* on the fatty and albuminous constituents of the nervous tissues. The action of alcohol, also rich in carbon, would allow a similar explanation, viz., the action of *carbon* on a brain stimulated by properly *oxygenated* blood.* Similar effects would also be produced by a blood

* We know that, of two liquids containing an equal amount of alcohol, that one which contains the most carbonic acid possesses the most intoxicating properties. Compare, for instance, champagne and hock, each of which averages about 12 per cent. of alcohol; or fresh and stale ale. Even drinks containing no alcohol, but highly charged with carbonic acid, as the "soda-water" of the shops, produce not a little exhilaration in those unaccustomed to their use.

containing such an extra amount of *carbon* as to render it unfit for keeping up the activity of the cerebral circulation; so that ether might as effectually suspend the circulation through the brain as Sir Astley Cooper's experiment of tying both carotids, and then compressing the vertebral arteries; which produced in an animal immediate loss of sensation and motion, both coming on again when blood was re-admitted. With this view, there would be excess of carbon in the cerebral vessels, stagnation of their circulation, and consequent insensibility. In both cases, excess of *carbon* being the cause of anæsthesia.

Chloroform has been supposed to exercise its influence principally on the *blood*, while ether acts on the nervous tissue; chloroform by rendering the blood unfit for the stimulation of the brain, ether by rendering the brain incapable of excitation. Some of the deaths produced by chloroform have been ascribed to its causing air in the vessels; and in some of the autopsies, particularly of Madlle. Stock (whose case was the subject of Malgaigne's Report on Chloroform before the French Academy), air has been found very extensively in the vessels; but whether this was common atmospheric air, or carbonic acid, or some other gas from decomposition of the blood during life or after death, no examination seems to have decided. Chloroform has a marked chemical action on the blood, which might give rise to this great and sudden development of gas; carbonic acid exists normally in the blood; chloroform might disengage an abnormal and fatal quantity, or it might again assume a gaseous form itself in the vessels. Chloroform increases the quantity of the serum, thus accounting for the remarkable fluidity of the blood so often noticed, and diminishes and condenses the fibrin; hence, the poorer the blood, the more dangerous must be the consequences of its use. According to Guérin, the globules of the blood, brought into contact with chloroform, contract, lose their colour and form; little bubbles of air arise on their surface; and some of them entirely disappear.

It is generally admitted that chloroform is much more dangerous than ether; and it would be interesting to know upon what its fatal results depend. Asphyxia may be left out of the question. Does it act on the nervous tissue, or on the blood primarily? are its effects due to an instantaneous poisoning of the blood, as some have supposed? or does it paralyze the nervous substance? Does it cause the phenomenon of air in the heart and vessels, and is death caused by this lesion?

Dr. KNEELAND added that, on these and kindred questions, of great interest and importance, which naturally presented themselves, he should be glad to hear the opinions of gentlemen who had had greater experience in the use of anæsthetic agents.

With reference to this subject, Dr. JACKSON mentioned a case of etherization which proved fatal, in which there was a development of gas in the heart. Although the examination was made but a few hours after death, the signs of putrefaction were quite marked.

Dr. TOWNSEND thought that in many cases there was a spasm of the ves-

sels of the lungs, resembling asthma, produced by the first inhalation of ether, which might interfere with the proper oxygenation and decarbonization of the blood. Dr. T. had noticed, in some cases, a coating of saliva covering the surface of the sponge, which it was necessary to remove, as it prevented all access both of ether and of atmospheric air.

In answer to a question by Dr. HAYWARD, Dr. BETHUNE remarked that he had not found asphyxia so likely to follow the inhalation of *sulphuric* as of *chloric* ether.

Nov. 11.—*Sudden death from probable Chronic Disease of the Heart, combined with Œdema of the Lungs.* Dr. BOWDITCH reported the case.—The patient was a lady, forty years of age; active in mind and body; seven months advanced in pregnancy; formerly had had pulmonary difficulties; within the last year has had dyspnœa with palpitation. Some time since, after waltzing, had palpitation and hæmoptysis; quite lately, recurrence of hæmoptysis; quantity of blood expectorated about a teaspoonful. Both of these accesses followed bodily and mental excitement, having been waltzing on one occasion, and on another having visited friends in the city. The last and fatal attack was while in the city. Dr. B. was called to her, and found her at the house of one of her acquaintance, which she had with difficulty reached, having been seized with dyspnœa while walking. She was breathing very hurriedly, with great distress, and coughing occasionally; raised large quantities of watery fluid, quite drenching several napkins. She was in a sitting posture, scarcely able to speak—begging for air, with hands livid and cold, and pulse scarcely perceptible. Dr. B. directed the application of external irritants, heat to the extremities, and syrups, nitrous ether, &c., with a view to exciting the circulation and relieving the cough. Patient grew worse and more distressed. Dr. Ware, sen., saw her in half an hour after the attack, in consultation with Dr. Bowditch. During a temporary absence of Dr. B., the patient rose suddenly from the bed, in a paroxysm of dyspnœa, fell back, and died immediately. Dr. B. detected very fine crepitant râle in right back, throughout, during a very hasty examination; the condition of the patient not allowing anything more than the most trivial exploration. No post-mortem examination could be obtained. Dr. B. thinks there must have been chronic cardiac disease, and that this was conjoined with pulmonary œdema, which, suddenly occurring, had suffocated the patient.

Nov. 11.—*Encephaloid Tumour between the Rectum and Bladder, with the same disease in the Liver.*—Dr. JACKSON reported the case which he had recently observed, and which occurred in the practice of Dr. M. S. PERRY. The patient was sixty-four years of age, had formerly been a seafaring man, but for many years had led a very sedentary life. Subject to hemorrhoids, and habitually costive; but otherwise healthy. Last February there came on pain in defecation, and often so urgent as to require opiate injections. Large

doses of cathartic medicine required at first; but about the month of April diarrhœa came on, and continued almost without intermission until death. Extensive sloughing took place about the months of May and June, and with much relief to pain, though there continued much tenesmus; dej. involuntary. In May and June, hemorrhage occurred frequently, and to such an amount as to threaten life. Patient also suffered much from dysuria, became greatly reduced, and gradually sank under the disease, but without any symptoms referable to the liver.

On dissection, the cavity of the pelvis was found to be filled by an extremely soft and well marked encephaloid mass; partly white, but more or less coloured by blood, of which there was a considerable effusion. In the midst of it was a cavity one and a half inch in diameter, and formed perhaps from such an effusion; the inner surface being generally smooth, and of a deep brown colour, but having some old coagula adhering to it. The rectum had sloughed entirely away, to the extent of about five inches; commencing just above the anus, and involving the whole circumference, except for a narrow, irregular, thin strip. The edges of the intestine were soft and much discoloured, but not at all carcinomatous; the mucous surface just above the disease being healthy; and it was upon this last circumstance that the tumour was supposed to have originated externally to the intestine. The large intestine contained throughout a considerable quantity of soft feces. Bladder somewhat reticulated upon the inner surface, but otherwise not remarkable.

The liver contained great numbers of carcinomatous masses, generally tinged by effused blood, though some were of a pearly white colour. Hemorrhagic tendency strongly shown, though there were no large effusions. The most unusual appearance in this organ was the formation of cysts, varying from half an inch to an inch in diameter; some contained clear, yellow serum, and were lined by a serous-looking membrane; others contained almost pure blood, viscid and very dark; but generally there was a mixture of blood and serum. As in the case of the cyst in the pelvic mass, the inner surface was often smooth, and of a dark brownish colour, as if formed from the effused blood, with some opaque buff-coloured deposit, which under the microscope was found to be fat; other cysts were lined by a white encephaloid substance, or by a mixture of this and effused blood. In one or two places, there was found, to the extent of about two-thirds of an inch, a very delicate, yellowish, lax, cellular tissue, infiltrated with serum, but quite defined, and without a trace of encephaloid or effused blood; an appearance not very unlike what is occasionally found in the brain after an old apoplectic effusion. Intervening structure healthy, as usual in these cases. Organ not enlarged. No peritoneal adhesions; nor was any further disease found in the other organs.

Nov. 25.—*Encephaloid Disease of the Liver and Stomach. Pulmonary Apoplexy; with Rupture into the Pleural Cavity.*—Dr. JACKSON reported the case, which occurred in the practice of Dr. ALLEN, of Cambridgeport, and which

he examined a few days ago. The patient was a farmer, aged fifty-four, and of robust health, except that for several years he had been subject to lead colic, the lead pipe that supplied his house with water being very much corroded; there was also the characteristic blue line about the patient's gums. Last April he took, for an obstinate attack of constipation, very active cathartics, and at last croton oil; this was followed by intense pain in the abdomen, which lasted for several hours, and more or less for some weeks. From that time until his death he complained of distress, and often of urgent pain in the region of the liver, tenderness on pressure over the organ, and a sense of weight so that he was unable to lie upon the left side, and often, when sitting up, was obliged to incline forwards upon the back of a chair; the distress he often compared to constriction as from a cord about the waist. The liver was felt to be enlarged when Dr. A. saw him about six weeks ago, and increased considerably in size before death; dej. clay-coloured at that time, but under the use of the hydriodate of potash the colour soon became natural; skin never yellow; never complained of his stomach; appetite sufficiently good until the last three weeks, and he even ate a slice of boiled beef four days before death, and bore it well. This comparative latency Dr. J. has observed in several other cases of carcinoma of the stomach, where the disease seems to have supervened upon that of the liver. No hæmoptysis, nor any other symptom tending to a suspicion of pulmonary disease. Patient became much emaciated; but kept about until three weeks before death, from which time he was confined to his bed.

On dissection, the liver weighed about nine pounds ten ounces, and was filled with encephaloid masses of about the average consistence, contrasting strikingly with the case last reported, as it did also in the fact of there being nowhere any effusion of blood in connection with the carcinomatous deposit. There was also another striking difference between this case and the other, in regard to old peritoneal adhesions, which here were universal between the liver and the diaphragm. Such adhesions Dr. J. has rarely, if ever, observed in other cases of this disease, and he is disposed to connect the fact with the local symptoms, of which the patient had complained so much during life; the disease, when confined, as it usually is, to the interior of the organ, being not unfrequently met with when nothing had led to a suspicion of its existence.

The pyloric portion of the stomach was pretty extensively carcinomatous, with ulceration, which penetrated into the muscular coat, the structure being whitish and condensed; the cellular membrane and lymphatic glands in the neighbourhood were also affected; and there were traces of the disease upon or beneath the diaphragmatic pleura on the right side, and the peritoneal surface within the cavity of the pelvis.

The left side of the chest was observed to be somewhat enlarged, and very resonant on percussion; and on puncturing it there was a free escape of inodorous gas. The cavity contained five or six ounces of nearly pure blood,

and over the anterior portion of the lower lobe was a thin, filmy deposit of fibrin, apparently from the effused blood; there being no appearances of pleurisy. Beneath this fibrinous deposit the pleura was stripped up to some extent, and in the substance of the lung immediately beneath it was a ragged cavity, which, though empty, was capable of holding two or three ounces; the surrounding pulmonary structure being more or less infiltrated with blood; into this cavity the air entered freely from a neighbouring bronchus on inflation. Pulmonary apoplexy was also found to a considerable extent in the back part of the upper left lobe, and to some extent in different parts of the right lung, but without any further breaking down of the structure. Dr. J. had never before met with laceration into the pleural cavity in these cases, but referred to Cruveilhier's remarks upon its occurrence. The other organs were healthy.

Nov. 25.—*Buttons in the Intestines producing symptoms of obstruction.* Case reported by Dr. HOMANS.—A male child, aged 14 months, on the 23d of October seemed quite unwell, after passing an uneasy night. There was strong effort at expulsion of matters from the bowels. Under these straining attempts, some feces passed, without relief of symptoms; pulse accelerated; skin hot; tossing of head, &c.; slight vomiting also occurred; suspicion of intussusception arose. In the night, the above symptoms having been on the increase for twenty-four hours, a teaspoonful of castor oil was given. Through the night severe pain of paroxysmal nature; the intervals marked by perfect ease; the pain being compared by the mother to uterine efforts in parturition. On the following day, the child was much more ill and feverish, and Dr. H. saw it at nine o'clock A. M.; tenesmus urgent; patient moaning; skin hot; pulse full and quick; a slight discharge of bloody water from bowels. On palpation of abdomen, a hard swelling was detected, about half way between umbilicus and crest of right ilium, of the size of a pullet's egg. On examination by the rectum, a hard mass was discovered, somewhat yielding to pressure by the finger. A large enema was given from a powerful syringe, which was unsuccessful; the fluid being returned before overcoming the obstruction. A second injection was given; in a short time an explosive sound (internal) immediately preceded the discharge of a large lump of solid feces, pushing before it a small *button;* several dejections followed in quick succession, composed of solid and fluid matters, among which were passed *seven buttons*, made from horn, porcelain, and metal, and varying in size from those used for pantaloons, to the ordinary shirt button. The child was soon relieved, and has been well since. Nothing had passed from the bowels for forty-eight hours previously to the attack.

Dr. Homans remarked that the case was important as illustrating the necessity of accurate diagnosis; several of the distinctive features of intussusception and hernia being present, viz., the discharge of bloody fluid, and the tossing of the head so often noticed in intussusception; while the coldness of

the external surface, frequently remarked therein, did not exist in this case. There was slight vomiting at first, and likewise the inability of passing feces, even with violent effort, which might have led to a suspicion of hernia. The detection of a tumour by the finger suggested the use of an enema, as affording a chance for the removal of any foreign body obstructing the intestine.

Nov. 25.—*Collection of Pus in the cavity of the Uterus; operation for opening Os Uteri, closed by a firm Septum; progressing recovery from uterine disease; subsequent death, after gastric disorder, induced by excess in eating.*—The subject of the subsequent report was a patient of Dr. HYNDMAN, of this city, from whose letter, giving a history of the case, as first observed by him, the following abstract is presented. The letter was read to the Society by Dr. STORER, who afterwards saw the patient in consultation, and whose observations will be given below.

Dr. Hyndman first visited the patient on 3d of August last; nine days previously, on the second day of a regular menstrual period, patient wetted her feet; catamenial discharge ceased suddenly. Patient reported having had a *rigor* the day before Dr. H. first saw her; acute pain in left side followed, "extending from the crest of the ilium, upwards, as far as the edge of the floating ribs, and as far forwards, towards the mesial line, as the umbilicus." Calomel and opium, in combination, were given, and "turpentine stupes" applied over abdomen. The above-mentioned pain extended, after three days interval, across mesial line, towards right side; but little pain was complained of, at any time during the attack, over the pubic region: nothing would have excited suspicion of metritis. The patient improved under the above treatment, and, in a fortnight from the time when she had the *rigor*, was able to be about. Three weeks later (six weeks from time of sudden suppression of menses), patient called to say "that she had not been *unwell* for six weeks;" she was pale and "chlorotic" in appearance. Dr. Hyndman prescribed tonics; a week afterwards, on seeing his patient, Dr. H. was told by her that she had noticed "something of a swelling," just above pubis; on examination, Dr. H. observed "an unusual fullness in that region;" he supposed it might be retained menstrual fluid; swelling, however, was not very marked: *savine*, in conjunction with the other medicines, was ordered. Shortly after, imprudence in eating induced an attack of gastric irritation, accompanied by pain and vomiting. Relief by opiates. Six weeks after this, the abdominal "swelling," before mentioned, had so increased that the appearance was that of a person in the seventh month of utero-gestation. Dr. Storer was now called in consultation.

Continuation of the Case. By Dr. STORER.—Dr. S. saw this patient with Dr. Hyndman, on the 11th inst., and found her to be a young woman seventeen years of age. Her abdomen was as large as that of a woman's far advanced in pregnancy, presenting a peculiar form, however, the enlargement being anteriorly, as if something projected directly forwards—there was but slight

fullness laterally. She complained of some tenderness in abdomen, upon pressure. The breasts were not enlarged, and no change in the areolæ could be perceived. Upon examination, *per vaginam*, which produced considerable uneasiness, the body of the uterus was found to be somewhat distended, and upon pressure gave to the finger the sensation of contained fluid. She has had no discharge of any kind from the vagina since the suppression of her catamenia. Dr. S. agreed with Dr. Hyndman in his diagnosis—*that the uterus was distended by fluid*—but, as the menses had been suppressed only about three months, he thought that they alone could not have produced the great tumefaction, but that, acting as an irritating cause, they had probably excited the uterus to pour out an abundant secretion besides. It was proposed to pass an instrument into the os uteri to empty the organ of its contents. Dr. Hyndman consenting, Dr. S. endeavoured, the sixth day, to pass a *gum-elastic catheter*, supposing that there would exist only a simple agglutination of the lips together—but was surprised to find that the instrument would pass but a short distance beyond the os uteri, and that only by applying considerable force—and when withdrawn, its extremity was covered with mucus and blood. *Simpson's sound* could be passed with no more ease. Dr. S. decided that the adhesion of the cervix was so firm as to require a trocar, or some other cutting instrument, to remove it, and suggested that the operation should be performed by a surgeon. Dr. J. M. Warren saw patient the following day, and after a very minute examination of the case, coincided in the above opinion—and passing a trocar into the os, and then, with considerable force, through the adhesions of the cervix, freed the uterus of *seven pints of offensive pus*. The girl is now (25th) doing well, although more fluid is evidently collecting in the uterus.

It would appear, from the above history, that with the *peritonitis*, produced by the sudden suppression of the catamenia, *metritis* had existed—which united the lips of the os, checked the menstrual function, and caused the lining membrane of the uterus to pour out this great quantity of purulent matter.

It may not be uncommon for *metritis* to exist, and for any secretion to be poured out of the uterus, which may be the result of the inflammation—but from the fact that several writers make no reference to any *collection of pus* in the uterus, and that the translator of Boivin and Dugès' work points to a case of this description by Dr. John Clarke, contained in the third volume of the "Transactions of the Society for the Improvement of Medical and Chirurgical Knowledge," it is inferred that cases of a similar character to that now reported must be of rare occurrence.

Upon looking up Dr. Clarke's case above referred to, Dr. S. found it entitled, "Case of a Collection of Pus in the Cavity of an unimpregnated Uterus." In this case, the patient was sixty-five years of age, and had ceased to menstruate for several years. After having a discharge, for several weeks, from the vagina, which was at first sanguineous, but afterwards became of a brownish colour, and offensive to the smell, "the patient was suddenly seized upon waking,

during the night, with violent pain in the lower part of the abdomen, and a sensation as if something had given way there." The next day she died. Upon an examination of the body after death, the uterus was found gangrenous, and perforated at its upper part—through which opening, pressure being made, a quantity of offensive pus issued; seven or eight ounces of similar pus were found in the cavity of the abdomen, which had been poured out of the uterus, and about five ounces were still retained in that organ. The orifice between the cavity of the uterus and its cervix was closely contracted, so as not to have allowed the contents of the uterus to be discharged through it; and the previous discharges which had existed "must have been poured out from the cervix and os uteri, and from the vagina."

Sir Charles Mansfield Clarke, in his "Observations on those Diseases of Females which are attended by Discharges," speaks of two cases of large collections of pus being produced in the uterus by inflammation; in one of them, "the uterus was found to be so much enlarged as to fill the cavity of the pelvis." A spontaneous discharge of the fluid finally occurred from the vagina, and the patient recovered. In the next case, "the pelvis was found completely filled by an enlarged uterus, which was also perceptible above the pubis," a sudden discharge of offensive pus took place through the rectum, which continued to flow for a time with the feces, and then entirely ceased; the uterus returned to its normal size, menstruation took place, and the patient recovered. * * * * * *

At a subsequent meeting of the Society (Dec. 23d), Dr. Storer reported as follows in regard to the patient whose case is above given. Three pints of pus, in addition to the former quantity, had been removed from her uterus, by Dr. J. M. Warren, four weeks after the first operation. About a week after the second operation, having, for weeks, lived upon a liquid, farinaceous diet, the patient ate immoderately of potatoes and cabbage; immediately after this meal, she was attacked with bilious vomiting and purging, which resisted all remedies, and she rapidly sank and died. Dr. Hyndman, who had charge of her, says that not the slightest febrile action followed either of the operations, but that she was doing very well, until the above narrated excess in eating was committed. No post-mortem examination was obtained.

Dec. 9.—*Scirrhous Tumour of the Rectum and Bladder.*—Dr. J. M. Warren exhibited a specimen of scirrhous disease of the rectum, and stated the case, which was as follows: The subject was a gentleman fifty-six years old. Nineteen years before, he had been operated on for the piles, and at that time a small hard tumour was discovered near the anus, which he declined having interfered with. He has occasionally had attacks of pain in bowels and indigestion, but never any serious symptoms in the rectum. He has always had diarrhœa since. About a year ago, Dr. W. was called to him on account of a retention of urine, and on an examination being attempted per anum, it was found that the rectum was obstructed by a scirrhous mass, which pre-

vented the introduction even of the little finger. The retention was gradually overcome by the use of the catheter in the course of a fortnight, and the patient has had moderately good health during the summer. Two months since, Dr. W. was called to him with a second retention, which gave way to remedies, without the use of the catheter. It was, however, shortly followed by a universal dropsical effusion, and the patient gradually sank exhausted.

On examination, the last four inches of the rectum were found pervaded by a scirrhous mass, leaving in the centre a narrow pathway for the feces. The disease had extended to the bladder and urethra, so as to encircle the tumour and apparently to implicate what has been called the middle lobe of the prostate gland, which projected into the bladder and occupied about a third of the cavity.

Owing to the loose state of the bowels, this patient had been able to live for nineteen years with this tumour, and suffered but little inconvenience from it, and in fact was not made aware of its existence by any pain or other sensation, unless by an occasional irritation of the skin in the neighbourhood, on account of the imperfect manner in which the evacuations were controlled.

The left kidney was in a high state of inflammation, and there was some purulent deposit in the pelvis of that organ; the ureter was not extraordinarily distended.

It might be stated that, during the last week of his life, he refused food entirely, on account of the difficulty and pain in swallowing, caused by an inflammation in the fauces. Very severe hiccough ensued, which was mitigated, and the last part of his life made easy, by the use of chloric ether administered from time to time on a sponge by the nurse, as occasion required.

Dec. 9.—*Acute Nephritis; latent.*—Dr. JACKSON exhibited the specimens, and reported the following case, which he examined a few days ago, and which occurred in the practice of Dr. John Ware. The patient was a woman fifty years of age, and had been sick since the summer of 1849. Disease came on with vomiting, purging, and excessive pain in the abdomen, lasting more or less for several weeks. Last February, Dr. W. saw her, with much the same symptoms; there was then also felt a tumour below the right hypochondrium, varying much in size at different times, and usually very tender and painful; whole abdomen occasionally distended and tympanitic; she gradually sank; the immediate cause of death being probably the nephritis, or a pneumonia which was found to some extent, though no symptoms referable to either disease were observed during life. The urine not being deficient in quantity, though for a short time before death it deposited a thick lateritious sediment.

On dissection, both kidneys were found most extensively inflamed, and the form of inflammation very much like what is observed in the case of purulent deposits; being in distinct foci, from a fourth to half an inch in extent, and characterized by an effusion of thick pus, or by a mixture of pus and lymph,

or by the simple infiltration of lymph; the redness about the deposits being very limited, and evidently due, in part, if not wholly, to the extravasation of blood. Where pus alone is found, proper abscesses are of course formed. The intervening structure healthy; the tubular portions being scarcely, if at all, affected; mucous membrane very slightly affected. The idea of phlebitis not having occurred, the veins were not examined.

The stomach and intestines were examined carefully throughout, and found to be quite healthy. The liver, however, was somewhat diseased in structure; and though not generally enlarged, the right lobe was prolonged downwards nearly to the ilium, forming the very distinct and movable tumour felt during life. The absence of any disease in the alimentary canal, even supposing the liver to have been previously affected, appeared to be an interesting circumstance.

Another curious fact was observed in this case, and which Dr. J. has met with once before, though he has never heard the possibility of it alluded to, and that was the existence of a small distinct tumour formed by the pylorus, though this portion of the stomach, as well as every other, was healthy, the thickness and consistence being perfectly normal. The tumour was as distinct after death as before, and the explanation of it was determined as soon as the abdomen was opened.

Dec. 9.—*Tumour of the Orbital Cavity. Extirpation of the Eye.* By Dr. HOOPER.—The patient from whom this disease was removed was a pale, feeble-looking man, fifty-three years old. The disease had existed in the left eye for three years, was never attended with any severe pain, but a sense of weight and uneasiness. The eye was much protruded, the organ itself not enlarged, cornea transparent, much chemosis of the conjunctiva and eversion of the lower lid, vision entirely gone for the last two years. Oct. 29. An exploratory incision gave issue to a quantity of serous fluid, and the protrusion became much diminished, but again increased; and on the 26th of November, the eye was removed (patient under the influence of ether). There was found behind it, and slightly adherent to the sclerotica, a tumour, which, examined by Dr. H. J. Bigelow, was found to be of a semi-transparent structure, and of an albumino-fibrous nature. Dr. Bigelow showed drawings of the microscopical appearances; simple nucleated cells, with no appearance of a cyst.

Dec. 23.—*Case of Encysted Ovarian Tumour.* Reported by Dr. COALE.—Mrs. H., æt. sixty-eight. Has had four children. Health not good after birth of last. Menses irregular for some time, and ceased at age of forty-three; health much restored afterwards. Early in 1843 fell down a few steps, striking the lower extremity of the spine; fainted at the time, and felt very ill. Returned home the next day, three miles distant, and was confined to her bed three weeks, and three to her room—in all, six weeks. From that time her health declined, and on the 12th of the following April (three months after the acci-

dent), the appearance of enlargement in the left iliac region commenced. By the 29th of October, 1845, about thirty-two months after the accident, the enlargement was so great as to require tapping. The operation was repeated, and the quantity of fluid discharged is as follows:—

	lbs.		lbs.		lbs.
1845, Oct. 29th,	30	1849, Nov. 9th,	23	1850, August 1st,	15
1846, June 23d,	18	Nov. 29th,	22	Aug. 12th,	15
1847, Feb. 17th,	25	Dec. 17th,	21	August 23d,	11
Aug. 3d,	20	1850, Jan. 5th,	21	September 3d,	11
Dec. 14th,	24½	Jan. 22d,	21	September 14th,	14
1848, Ap. 13th,	28	Feb. 8th,	22½	September 24th,	14
July 12th,	27	Feb. 23d,	24	October 3d,	14
Sept. 18th,	23	March 10th,	21	October 12th,	14
Nov. 16th,	26	March 26th,	19	October 22d,	16
1849, Jan. 17th,	27	April 9th,	19	October 31st,	14
March 4th,	26	April 23d,	18	November 8th,	15
April 13th,	25	May 7th,	16	November 16th,	12
May 21st,	20	May 20th,	16	November 24th,	16
June 25th,	22	June 1st,	16	December 2d,	12
July 28th,	22	June 14th,	18	December 10th,	13
Aug. 26th,	29½	June 27th,	15		
Sept. 22d,	27	July 9th,	13	Total, 51 tappings, 989½ lbs.	
Oct. 17,	26	July 20th,	12		

The form of the tumour during life could be readily distinguished through the walls of the abdomen, lobulated, not tender, with a very limited mobility. Across the lower part, coming from the left side on a level with the anterior superior spinous process of the ilium, and disappearing about the pubis, was a very perceptible band, soft and elastic, giving a sensation of containing fluid. This, on examination after death, was found to be the sigmoid flexure of the colon, forced forwards and upwards into that unlooked-for position apparently by the tumour commencing immediately behind it, and carrying it up with its growth. With the exception of obstinate constipation, and an occasional pain at the epigastrium when the distension was great, there was no particular suffering during the progress of the disease; and the clearness of mind and cheerful temperament of the patient were maintained till within an hour or two of the decease. In tapping, a variation of the operation was practiced, which may be worth mentioning. Upon emptying one sac, without withdrawing the canula, the trocar was reintroduced and pushed into another, and sometimes into a third and fourth. In this way the bulk of the tumour was much more diminished than would have been done by the puncture of one sac alone, and without any additional pain or danger to the patient.

The fluid at the first operation was thin and clear; latterly, it became as thick as the white of an egg, and occasionally turbid, with considerable admixture of lymph. Some of the smaller sacs, however, discharged in the manner above described, contained a fluid of almost inky blackness.

Death occurred from very gradual exhaustion of nature. Examination after death displayed the tumour—a thin sac, fitting the cavity of the abdomen. It was covered partially on the right by recently effused lymph—the result of a slight peritonitis of the last few days. Attachments existed with

the anterior walls of the abdomen for the space of about four inches square, where the punctures had been made, and more extensive ones in both iliac fossæ. The os uteri was almost obliterated—the uterus lengthened—its posterior wall closely attached to the tumour. The right Fallopian tube was free; the left and its ovary lost in the tumour. The larger sac broke in handling it, displaying in its interior numberless others of various sizes, and these in turn containing others.

Dec. 23.—Dr. BOWDITCH reported the following case:—An Irishman, thirty-five years of age, a corn-measurer, had been for a long time exposed to the dust of grain, and a cough had been often excited by it. Finally, copious "vomiting of blood" occurred (according to statement of patient). The last hæmatemesis took place about three weeks since; but there had been three attacks during the year, and, each time, about a quart had been lost. Patient referred all symptoms and sensations to his *stomach*. On inquiry, Dr. B. found he had had slight cough at other times than when inhaling dust, although the patient scarcely allowed that it occurred, so very trivial was it. There was some emaciation. On auscultation, cavernous respiration, with gurgling, at lower half of right lung. There was less sound, generally, in this lung than in the other, but no marked signs at the top indicating tubercles. On the contrary, all the chief physical phenomena were at the lower parts. Three days after first auscultation, a second examination discovered all the above signs gone, or nearly so: patient improved. In a week, the bloody sputa, a few of which were perceptible on his entrance at the hospital, had disappeared. Five days ago, he suddenly again raised about ℥xvi of blood, which was apparently purely arterial; it was raised in the night, without previous warning, and had formed into a large dense coagulum (as if it had been taken from a vein in the arm), in the sputa-cup. This was noticed at the physician's visit the next morning. The physical signs above enumerated again presented themselves. Since this, they have subsided again.

Dr. B. remarked that this case is to him unique in its characteristics; he said it might suggest the idea of pulmonary apoplexy; there were doubtless condensation and congestion of the pulmonary tissue, which were relieved by the hemorrhages—probably no cavity.

Dr. BIGELOW, sr., said, in reply to a question from Dr. Bowditch, that he did not remember precisely such a case; he had often doubted whether pectoriloquy could be said to exist, properly, unless gurgling assured us of a cavity.

Dr. Bowditch remarked, that the decision between pectoriloquy and bronchophony was not the point; but whether such a case, with the peculiar attacks of hæmoptysis, and the sudden changes in the condensation of the lung, according as the bleeding occurred, was not unique.

Dec. 23.—Excessive Liquor Amnii in a case of Twin Birth. Dangerous Symptoms. Case reported by Dr. STORER.—On the 13th ult., Dr. Storer was suddenly called to a woman in labour at her seven and a-half month of pregnancy. She had been unwell for some months, complaining of much cough and difficulty of breathing, but had consulted no physician, and, for the greater part of the time, had performed her ordinary domestic avocations. He found her sitting in her chair, suffering from a severe pain; upon its cessation, she was placed upon her bed, and examined per vaginam. Feeling, through the unbroken membranes, a hand, he immediately ruptured her bag of waters, reached a foot, turned the child, and delivered. This was readily accomplished, on account of the small size of the infant. Upon the birth of the child, the mother experienced, immediately, two or three exceedingly strong pains, in the midst of which she coughed much, and expectorated quite a quantity of frothy, bloody mucus. Upon examination, he found a second bag of waters: his patient was herself satisfied she had still a child within her. As she was suffering greatly from dyspnœa, which almost prevented her from remaining on the bed, even in a semi-recumbent position, he ruptured the membranes. An enormous quantity of liquor amnii passed off. At this moment a severe pain ensued, which continued a minute or two, during which Dr. S. thought she must die. The dyspnœa was very distressing; there was a constant disposition to throw off bloody mucus; her countenance was livid throughout; the expression frightful; about four respirations in a minute. The pulse at the wrist imperceptible. Dr. S. was about to send for his forceps, when the head was expelled—the mother being supported nearly erect, almost unconscious of her delivery. In this state, it seeming impossible that she could survive for any length of time, the immediate friends of the family were summoned to see her die. For several hours she continued in the condition just described, gasping for breath, constantly fanned to enable her to breathe at all. Her lips and nails were of a deep purple colour—her face and neck more or less livid; she was unable to speak or to swallow. She lived, however, through the night, and the next day, supported, as has been before stated, in an erect posture—procuring some sleep; and during the latter part of her time taking a small quantity of stimuli, such as brandy, &c. The second night she was able to lie down in a semi-recumbent posture. The third night she lay almost horizontally. From this time she convalesced slowly, and is at this moment in a very comfortable condition, complaining only of debility. She is hereditarily disposed to phthisis, and has dullness on percussion and deficient respiration at the top of one of the scapulæ; but she has rallied from her confinement, much to the amazement of all who were with her, not excepting her physician.

While sitting up in bed, hours after her confinement, Dr. S. could hear no respiration over the greater part of the chest; at the apices only of the lungs did any air appear to enter, and there with great difficulty.

The children, which are still alive and well, were quite small, weighing

only about five pounds each; but the quantity of liquor amnii was very great —a larger quantity than Dr. Storer remembers ever to have seen, unless there existed at the same time a diseased placenta.

Dec. 23.—*Puerperal Fever—unusual Symptoms.* By Dr. STORER.—Dr. Storer stated that, as several puerperal cases had occurred since the last meeting, he would refer to one which fell under his treatment. On the 9th instant, he was called to a lady, thirty-five years of age, in labour with her third child; she was delivered after six hours pain. The first three days she convalesced, as well as after either of her previous accouchements. On the morning of the fourth day, he learned she had had a restless night, and had had three dejections. When he saw her, she had no pain in the abdomen, and felt no uneasiness upon pressure being made there; the pulse but slightly accelerated; she complained only of *an urgent disposition to stool.* Her mother then told him that, for several weeks previous to her confinement, she had suffered from a *diarrhœa*, for which she was unwilling to take any medicine. Dr. S. ordered an opiate injection and demulcent drinks, by which she seemed relieved towards night. On the morning of the 5th day, complaining of *some pain upon pressure* over the uterus, she was leeched, and minute doses of calomel and Dover's powder were administered. She was relieved by the leeches, but her aspect was bad: the breathing was not much embarrassed; the pulse only 100, and she was not very restless. On the morning of the sixth day, the pain returned in the abdomen, accompanied with slight fullness there; a *blister* was ordered. On the 7th, pain much relieved; irritability of bowels lessened, but still *uneasiness* continued; she seemed much exhausted and depressed; continued medicine. On the 8th, *milk and lochia* suppressed for the first time; great prostration; abdomen more full, but still slight complaint upon pressure. On the 9th day after delivery, *died.* Was *conscious* throughout the whole of her sickness, and for several days continued to apply her child to the breast.

Dr. CHAS. E. WARE remarked that he also had had a fatal case of puerperal fever. He was called to Mrs. M. at 5 o'clock A. M., Dec. 9th, in labour. She had had slight pains all night. The waters had broken, and everything appeared right. She continued in about the same state till noon, making very slow progress; at 6 P. M., the pains diminishing, and the child having made no progress for several hours, she being a feeble and nervous woman, the forceps were applied, and one child, a male, delivered with very little difficulty. It was then found that there was another child, in the membranes, presenting by the arm. It was turned, and the feet brought down. At the head, it was arrested, the cord pulsating, and no pains. It remained about twenty minutes in this state before it could be extricated, and cried in the vagina at least ten minutes before it was born. It was still-born, but was resuscitated, and both children are now doing well.

The mother was much exhausted, but was got comfortably to bed. The next morning her pulse was 128, and she complained of a little sore throat. From this time her pulse continued to fall, till the 13th, when she had her milk, and everything appeared to be doing well. Her pulse was 100. That day she took oil, which operated well. In the evening, however, she had chills, a great sense of fatigue, and passed a restless night. The next morning she had a pulse of 120. There was no unusual soreness, nor fullness about the abdomen. Her respiration was natural, with a full expansion of the abdomen. Her milk and lochia were abundant and natural. She only complained of her throat, about which there were no apparent signs of trouble. Her tongue was dry, and there was sordes on the teeth. The next morning there was delirium, which continued more or less active until her death. Her pulse continued to increase in frequency, and was so fluctuating in character as to be with difficulty counted during the last two days of her life. While her consciousness continued, she only complained of her sore throat, and a sinking sensation at the epigastrium; never of the abdomen, which did not present any evidence of peritonitis or phlebitis, in the symptoms. Her milk left her. Her lochia continued to the last. She died the evening of Dec. 18th. There was nothing in her symptoms to call for or admit of depletion. She was treated with quinine and stimulants.

Two of her children, who were in the house, had sore throat at the time that she was confined. Her husband had one, commencing on the day that his wife died. They were all of an exceedingly mild character, and presented nothing malignant. Dr. Ware attended another woman in child-bed the night that Mrs. M. was confined, and another the next day, both before Mrs. M. presented any untoward symptoms. Both patients did very well.

Jan. 13.—*Imperforate Rectum; laceration of the Intestine.* Case reported by Dr. B. E. Cotting.—The child, a female, was born on the afternoon of the 8th inst.; on the 10th, at 3 P. M., Dr. C. saw it in consultation, and found it almost pulseless; abdomen tender and tympanitic; passed the little finger half an inch or more up the intestine, and was met by a firm, fleshy resistance; no operation was attempted, and the child died in about four hours. On dissection, the abdomen was found distended with gas; and in the cavity was a large quantity of meconium, with here and there some redness, and a small patch of lymph upon the peritoneal surface. As usual in such cases, there is a small portion of intestine below, with about the same extent of imperforation. Just above this last, there are seen two longitudinal rents, an inch or more in length, which extend through the outer coats, and one through the entire parietes. The intestine, which was exhibited, has not now the appearance of having been much distended; and neither does it show any signs of inflammation, externally or internally.

Jan. 13.—Dr. COTTING also presented a calculus that had formed in the neighbourhood of a large abscess about the tonsil, inflammation having commenced last November. The patient is a man forty-five years of age. The calculus, which has been only recently discharged, is about as large as the tip of the little finger, and white, somewhat crumbling, and of an earthy appearance, but laminated towards the centre.

Jan. 13, 1851.—*Polypus of the Ear.* By Dr. HOOPER.—The patient from whom this was secured, a man thirty-five years old, had a similar operation in April last; since that time, the present polypus has grown. It is a fibrous polypus of extraordinary size. The chief symptoms attending it were otorrhœa, and an inconvenience in moving the jaw. A slight hemorrhage followed its removal, soon ceasing on syringing the ear with cold water.

Jan. 27*th.*—*Malignant Tumour arising from Periosteum of left Tibia—Removal of the Limb.* Case reported by Dr. J. M. WARREN.—The patient was a mechanic, fifty-two years of age; his general health has always been good; knew of no hereditary tendency to carcinomatous disease; exhibited none of the appearances of the diathesis.

About twenty-three years ago, he struck the hook of a heavy ox-chain against anterior aspect of left tibia at about its middle. Within twenty-four hours after the injury, noticed a "swelling as large as a kernel of corn," which he was confident was not like the swelling of an ordinary bruise, being much harder, not discoloured, and excessively tender. This gradually increased, until, in three or four weeks, it was as large as a pullet's egg. It so continued for twenty years; never painful, but always excessively tender.

Three years and a half ago, while driving a nail, the hammer glanced and struck partly on the skin bone and partly on the tumour. The pain from the blow was excruciating, continuing for twenty-four hours, when it gradually subsided and he went about his business, but was subject to twinges of pain at intervals of a few hours for two or three months, the average amount being greater at night.

Two or three months after the blow, he noticed a gradual enlargement of the tumour, which, in 18 months, had grown to the size of a large orange. The increase of pain was in direct ratio to the growth. At this time, the whole of his limb below the tumour was swollen and œdematous, the tumour itself very red—at apex, a bright crimson, the integument covering it very thin and tense.

From a slight accidental abrasion, granulations now shot out, bleeding freely at the slightest touch. About a week after, the tumour was removed by a surgeon, and portions of the tibia, to which it proved to be adherent, chipped off. The wound healed in three months, and remained sound for a year. Then, a little to the outside of the cicatrix, a swelling was noticed of the diameter of a penny. This followed precisely the same course as the preceding tumour,

altogether resembling it, except in size and situation, being a little more on the outer aspect of the leg, and a little larger.

The appearance of the tumour was as follows just previous to removal of limb. Six inches above malleolus, on outer aspect of left tibia and apparently adherent to it, was a lobulated tumour, eight and three-quarters inches in circumference, two inches in height. It was somewhat constricted at its base by the integument through which it had extruded, as if forced up from beneath. Just to inside of its base was a hard tumour, in size and shape like a large almond, which he said very much resembled the original tumour of twenty-three years ago. This had been about six months in acquiring its present size.

Ten days ago, apex of large tumour became sloughy, and so continued. Integument at base was reddened, and the tenderness was greatest at that spot. When the limb was at rest, the pain was slight; after exercise, much increased. Patient kept about his business till within ten days.

No other tumour observed externally; none felt through abdominal parietes; no apparent enlargement of inguinal glands.

Dr. Warren removed the limb, above the knee-joint, by the circular method. On sawing the tibia longitudinally, after removal, it was found that the original tumour was between the periosteum and the bone. Its size was about that of a walnut; it was quite firm, white and fibrous in appearance; springing from one side of it was the large fungous growth described above.

Jan. 27.—*Tumour of Right Arm, requiring amputation at the Shoulder-joint.*—Dr. J. Mason Warren exhibited a tumour apparently of a malignant nature, and stated the case, which was as follows. The patient was a tall, thin man, thirty years of age. He had always been healthy until last April, when he had a discharge of blood from the kidneys, unattended with pain, which lasted him for one or two weeks. In June, the present tumour appeared as a small hard lump under the skin of the arm near the insertion of the deltoid muscle. This had gradually increased until it nearly encircled the arm, extending under, and raising up, the brachial arteries and nerves. The motions of the arm were not much affected by its pressure, but latterly it had taken on a more rapid increase, and the active portion of it was somewhat painful. Dr. Tewksbury, of Portland, considered the case a critical one, demanding the removal of the tumour or the arm, and directed the patient to Dr. W. After a very careful examination of the tumour, which was quite firm and movable, it was agreed that the patient should be put under the influence of ether, the tumour cut into, and if found to possess the character of a malignant growth, that the arm should be removed at the shoulder-joint.

The operation was done on the 15th February, and on the tumour being incised, all the gentlemen present, viz: Dr. Ray, of Kentucky, Drs. Thorndike, Minot, Williams, Foltz, Brown, Stone, and Gore, coincided with Dr. W. in regard to its having the appearance of a carcinomatous growth. The bleeding

from it, which was quite free, was therefore stanched with a bit of sponge, and the removal of the arm proceeded with. This was done by an anterior and a posterior flap, the former being made from without inwards, by means of a scalpel, in order to have a more regular wound, and the better to avoid impinging on the tumour. The subclavian artery, as it passes over the first rib, was so effectually compressed by Dr. Williams, that scarcely any blood was lost.

The patient is now doing well. On the 20th January, he had a discharge of bloody urine, which he attributed to the confined situation in which he had remained, on his back, and which had produced a severe pain in the loins. He seemed to attach but little importance to it, and in fact it soon ceased. Dr. Thorndike, who has charge of him, reports that he is rapidly recovering.

The tumour, on dissection, presented a lardaceous appearance, and, under the microscope, showed much fibrous tissue, in which, after much investigation, cancer cells were distinguished.

January 27, 1851.—*Acephalous Female Fœtus.* Presented by Dr. W. E. Townsend.—The chief peculiarity connected with this case was the difficulty of determining the pregnancy of the mother. She has had three children before this, and reported that she had no one symptom of pregnancy that she had before experienced, except the non-appearance of the catamenia after the death of her last infant, and, as she had been before irregular, she did not attach much importance to that symptom.

During the whole period of gestation, she felt, at times, severe pain in her sides and back, had much suffering accompanying her discharges, and during the last three months obtained but little respite from pain day or night. No placental murmur could be heard, nor could the pulsations of the fœtal heart be detected, and it was only after a careful vaginal examination that her condition could, with certainty, be discovered. She had no enlargement of the waist, the whole of the increase of size being below that part, and this varied greatly from day to day. At delivery, about two gallons of liquor amnii escaped; the fœtus presented by the feet, and was still-born. The spine is bifid as far as the lumbar vertebræ, and the whole bears a very striking resemblance to a large bull-frog.

Jan. 27.—*Microscopical Anatomy.* Dr. O. W. Holmes.—Dr. Holmes reminded the Society that he had, in the autumn of 1847, described and shown, at a meeting of the Society, certain new and hitherto undescribed bodies discovered by him in the cancellated structure of human bones. Several drawings of them were taken at the same time by Mr. McIlvaine of Philadelphia, then in Boston, which have been exhibited to the class during every course of lectures since that time.

These bodies have been lately described by M. Robin under the name of *medullary cells.* (See *Gaz. Méd.* for Dec. 22d, 1849, and *Am. Journal*

of the Medical Sciences for July, 1850.) He speaks of them as spherical or slightly polyhedric, transparent, with defined borders, and generally including a spherical, regular, transparent, sharply defined nucleus, with molecular granules between it and the cell wall. They are most abundant, he has remarked, in young subjects, and towards the end of the period of gestation.

There can be no doubt of the identity of these cells with those described and exhibited here two years previously to his publication. Several points may be added to his description. The nucleus, as Dr. Holmes has seen it, is of a remarkable yellow colour. In some instances he has found it containing a distinct nucleolus, in others there were two nuclei perfectly distinct, and in one cell lately noticed, there appeared to be four. The cells seem to be situated on the exterior of the bone, as they may sometimes be removed by repeated brushing with a camel's hair pencil. In size and general appearance, they are not unlike dried blood-corpuscles. They resist strong acetic acid and boiling water.

Dr. Holmes exhibited specimens of these bone-cells, which he proposed to investigate more completely hereafter.

He also showed the effect of polarized light in displaying the lamellated structure of bone, a circumstance not referred to in the works he has at hand, but of which he has for several years been in the habit of availing himself in his microscopic demonstrations.

Another point to which he called the attention of the Society, as illustrated in a specimen before them, was the *interrupted* form of the dentine tube, a form not shown by Mr. Tomes among the varieties he figures. The appearance is like that of a thermometer tube in which the mercury has become broken up into longer or shorter columns, or like what is often seen in the centre of a hair. The line of the tube shows an alternation of dark and light spaces, often very regular in size, the dark portions sometimes little more than mere dots, sometimes of considerable length. It can scarcely be doubted that this appearance is owing to the presence of an opaque deposit, natural or accidental, in a transparent tube, which it has imperfectly filled, in the same way that an unsuccessful injection partially fills an artery, and it may be considered another evidence of the tubular character of the dentine, if such were wanting.

ART. VI.—*Remarkable Obstetrical Cases.* By WILLIAM P. JOHNSTON, M. D., Professor of Obstetrics, &c., in the National Medical College, Washington, D. C. (With a wood-cut.)

CASE I. *A Male Infant weighing twenty pounds, delivered November 26th,* 1848.—Mrs. L., aged, at the date of her last confinement, thirty-eight years, was married at twenty, and has given birth to thirteen children at term. She is

above the average height of women; of large frame, corpulent, weighing probably two hundred pounds or more. I saw her for the first time during her last pregnancy, on the 9th of November, 1848: I found her suffering very much. Her abdomen was immensely distended, and tender to the touch. The lower limbs were exceedingly œdematous in their entire length. She complained of great stiffness about the hip-joints and knees, which, together with the weight of the abdomen, rendered locomotion very difficult. When lying in bed, it was impossible for her to move her lower limbs without assistance. Her breasts had not enlarged; her pulse was full and strong; tongue clean, red, and tender; acid eructations frequent. She ate but little, and without appetite.

A pint or more of blood was taken from the arm. She was ordered to take lime-water and milk, instead of tea and coffee. Diet to be very light, with very little animal food.

She was better after the bleeding, and she thought that the pain, stiffness, and œdema were somewhat relieved.

On Sunday, November 26th, 1848, at 5½ o'clock A. M., while standing, and without previous pain, the membranes gave way suddenly, with a report sufficiently loud to cause her husband to start from his sleep: the quantity of liquor amnii discharged was said to have been immense.

On my arrival, I found the head of the infant above the superior strait: the pains were feeble, and the os uteri dilated to the size of half a dollar; as the pains increased the os uteri dilated, and the head advanced very gradually in the first presentation. In the cavity of the pelvis, its progress was more rapid; but at the inferior strait there was some delay, notwithstanding the complete relaxation of the soft parts, and the strong bearing-down pains after the head had, with some difficulty, escaped: the infant, which was still alive, made several efforts to cry.

The greatest difficulty was now experienced, for the shoulders were so broad that it was impossible for delivery to be completed without causing one of them to descend at a time. Efforts were made to complete the rotation of the shoulders, and a finger was, with much difficulty, introduced into the left axilla, for which the blunt hook was soon substituted, and traction made in aid of the pains, which were still powerful.

A half hour, at least, was consumed before I succeeded in delivering the left arm. After some further delay, the right arm, which was under the pubis, was brought down.

Some difficulty was also experienced with the breech, but it was finally delivered in about three-quarters of an hour after the head. Unavailing efforts were made to resuscitate the child, which had died from the delay and pressure upon the cord.

The uterus contracted well, and in a short time the placenta was found lying loose in the vagina, and removed. There was but slight hemorrhage. The duration of labour was about eight hours.

In the evening I found her comfortable; after-pains not severe; pulse a little accelerated. There was a constant stillicidium of urine.

Nov. 27.—No fever; pulse 72; urine continues to be discharged in great abundance, and the œdema is rapidly disappearing. Lochia very small in quantity.

From this time convalescence advanced without interruption. There was no milk secreted.

Weight and dimensions of Mrs. L.'s infant, delivered Nov. 26, 1848:—

Weight of infant (male)	20 lbs. exactly.
Length	25¼ inches.
Breadth across the shoulders	8⅜ "
" " hips	7⅜ "
Circumference of thorax, under arms	16¼ "
" around hips	16¼ "
Head.	
Occipito-mental diameter	6¾ "
" frontal "	5¾ "
Bi-parietal	4¾ "
Horizontal circumference of head	15¾ "
Circumference of head, around chin and middle anterior fontanelle	16⅛ "
Placenta weighed	3 lbs.

Cord was of an extraordinary thickness.

Note.—It may be well to mention that the instrument used in weighing the infant was tested, at my request, by Messrs. Campbell & Coyle, hardware merchants, and pronounced correct.

Case II. *Separation of the entire Circumference of the Vaginal portion of the Cervix Uteri, from pressure of the Child's Head during Labour.*—Mrs. D., from Ireland, æt. from thirty to thirty-five, of a strong muscular frame and sanguine temperament, was taken in labour with her first child on the 4th of November, 1845, about 12 M.

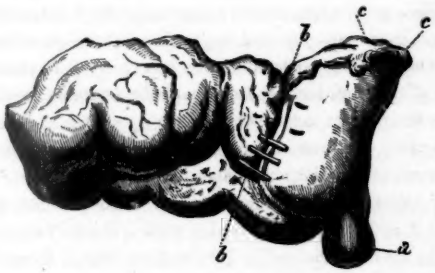
The os uteri, when first examined, was found dilated to the size of half a dollar, its edges were thin and hard, membranes somewhat protruding and tense. The anterior lip of the os presented a remarkable prolongation of an inch apparently.

The membranes soon ruptured, and the pains became more energetic. The os uteri and the vagina were nearly free from secretion. The pains became very strong and bearing down. There was frequent vomiting and insatiable thirst.

On the 5th, at 6 A. M. Found that the head of the child had descended, carrying before it the os uteri. The prolongation of the anterior lip was engorged, an inch in thickness, and presented in advance of the vestibulum.

Posteriorly the os uteri was thin, hard, and very rigid. Pulse full and strong; face flushed, and skin hot; vomiting persisting. She was bled from twenty to twenty-four ounces. In the course of the morning, a pint and a half of urine was drawn from the bladder by the aid of a gum-elastic catheter. The bleeding was repeated to the extent of a pint, and the extract of belladonna was applied to the os uteri.

At 10½ P. M., nearly thirty-five hours from the commencement of active labour, the pains having become still more energetic, the head was suddenly delivered, and upon examination it was found that a portion of the cervix had preceded it. Supposing at the moment that the laceration was only partial, I cut across that portion which presented with a pair of scissors; but in a moment after, the body of the child was delivered, when we ascertained that the separation had been nearly complete, the portion attached, and which had to be cut with the scissors, being only about half an inch long. The width of the separated cervix varied from an inch to an inch and a half. See figure.



Neck of Uterus separated during Labour (two-thirds natural size). [Drawn from a specimen preserved in spirit. Cabinet of Prof. Wm. P. Johnston, M. D., Washington, April 2d, 1848.] *a.* Prolongation of anterior lip. *b.* Stitches used to unite the parts severed by the scissors. *c, c.* Portion which remained attached to the womb after delivery of the child, and which had to be separated by the scissors.

The delivery of the child was followed by a gush of very offensive and partially coagulated blood. The placenta had separated before delivery, and was removed. The child was, of course, still-born.

On the 7th, the pulse was 84, skin pleasant, abdomen but little painful to the touch.

In the evening, the pulse rose to 102, and the abdomen became more tender. Ordered calomel gr. v, and Dover's powder gr. x; hop fomentations and an enema.

On the 8th, she was relieved, and convalescence fairly commenced. The lochia were natural.

In a few days, I ascertained that she had imprudently removed to another

house, feeling quite well. The catamenia soon returned, and she experienced no inconvenience from the accident she had sustained.

On the 10th of November, 1846, I went to inquire after the patient, whose case I have given above, when I found her with an infant in her arms of which she had been delivered about two weeks before. Her labour came on without any premonition, and in ten minutes, and before a messenger could be despatched for a physician, the child was delivered.

Her husband died before the birth of the second child, so that she has had no more, but she has enjoyed perfect health.

ART. VII.—*Hot Water in Sprains.* By SAMUEL JACKSON, M.D., formerly of Northumberland.

THE immediate application of cold water in sprains is strongly recommended by M. Baudens, in a paper quoted at p. 235 of the preceding No. of this Journal. As my practice, at least for the last thirty-four years, has been the very opposite of this, and has yet led to equally desirable results, I beg leave to relate it on the present favourable occasion.

I was riding past the house of one of my patients thirty-four years ago and heard the screams of anguish: a woman had just sprained her ankle and was then suffering intensely. I ordered the foot to be put into water as hot as she could bear it and to be retained there until I should return—hot water to be added as the first became cool. In about an hour, I found that the pain had diminished almost from the very first minute, and that it was then entirely gone. She was put to bed with the foot greatly elevated, and after some hours, though there was no pain, towels dipped in cold water were freely applied and continued for several days. She was then perfectly well nor did she ever again suffer from that sprain.

Another strong case within my clear recollection is the following. A man sprained his ankle and suffered such severity of pain as to make him cry out most lustily. I was present in a few minutes and put his foot into hot water, immediately bleeding him largely from the arm as he sat in his chair bathing his foot. The pain became rapidly milder and I went into the next room to drink some tea. Looking over my shoulder after a few minutes, I saw his friends employed in fanning him and sprinkling his face with cold water. I ran to him, when to my horror, he was, as to human eyes, a mere corpse. I instantly tilted his chair, laying him flat on his back and ordered them to elevate his legs. Cold sprinkling and spirits of ammonia now most fortunately in my pocket, were most diligently used, but it was an alarming time before he was restored. He was now put to bed entirely free from pain and the

next day he pursued his journey in the stage without any inconvenience, having a flannel bandage applied.

This man told me he had no idiosyncrasy with respect to losing blood; he was large, vigorous and healthy; hence the bleeding did not produce this alarming crisis. It was in a great measure the flaccidity of body and mind effected by a sudden transition from extreme suffering to perfect ease; though it must be apparent that the bleeding and bathing worked together so powerfully as to require more careful watching in any future case.

I once suffered a violent contusion of my elbow followed by intense pain: the arm was immediately put into a tub of hot water when it soon became entirely easy, requiring nothing further except rest. I have treated many other sprains and contusions in this way and I do not recollect a single case wherein the hot water failed of giving surprising relief.

I had been prepared for trying this method by reflections on the great comfort of warm bathing in many cases of conjunctivitis, before any considerable *error loci* had yet been formed; and on the fact, that in general relaxation of the system, there is less pain from parturition or any other violence.

How long that state of the part which is benefited by hot water, may generally continue after the accident, can hardly be defined. I have no recollection of using this remedy after a lapse of two hours, but I cannot be prepared of course to define the limits. If there has been time for inflammation to form, heat is inadmissible on my principle. Sometimes a tumour will instantly rise, but this being without inflammation, there can be no objection to the hot water.

It is very desirable to ascertain the best methods of refrigeration. M. Baudens keeps the foot night and day in a tub of cold water—a very inappropriate and inconvenient practice, if I am not greatly mistaken, for it prevents the proper position of the limb, which ought to be much elevated and evenly so from the acetabulum to the foot. Towels dipped in ice water and spread over the limb and bladders of snow or of pounded ice so placed that their weight may be supported by the pillows, are very conveniently applied. Ice or snow is particularly useful through the night when nurses and patients are sleepy and heat is sure to accumulate. A certain medium however must be observed with respect to the degree of cold, for it may easily be overdone unless the heat be great.

Suppose then a violent sprain has been relieved of all pain by hot water, let no one look upon the danger as past. The patient ought to be placed in bed with his foot greatly elevated, and after a few hours, cold ought to be applied even if the part is entirely easy. Inflammation may form, let us then prevent what every one knows is hard to cure in such parts. I have often seen lead water used and B. Bell has confidence in this and natural mineral waters, but truly I cannot believe they have any superiority over the pure fluid.

Low diet from the very first must be used in every case and purging too

when the system will bear it; but if the patient is robust, he should lose blood from the arm. So much for the prevention of inflammation. I should not say a word about its cure had not M. Baudens advanced something bordering on novelty. He seems to have a horror of leeches because they may attract blood to the part. Now if the general arterial action has been lowered and the leg kept elevated, this horror need not be entertained. This we think would be the decision of a great majority of the profession in the present case. If I were called to a sprained ankle already in a state of severe inflammation I should certainly, after bleeding from the arm if necessary, apply an abundance of leeches and follow them up by cold, the limb being greatly elevated. B. Bell says, "No remedies I have ever employed answer so well as local bleeding:" and in the same page he further says, "When the injury has been severe we are obliged to apply leeches once and again. They require indeed to be repeated from time to time as long as any serious degree of pain continues."

After an indefinite time when all tendency to active spreading inflammation has been subdued and the little that is left is very feeble or confined to a small space, a very active large blister will generally absorb and carry it forthwith out of the body, but this is a perilous experiment and may do much harm if it do not fulfil our intention of extinguishing at once the whole disease, or of subduing it so far as to prevent reaction and thus to favour the operation of a second blistering. Whenever it has been determined to use this remedy, the part ought to be rubbed for fifteen minutes with *decoct. canthar. ex terebinth.* and an active plaster applied, so as to draw an effectual blister in the shortest time possible. The quick drawing of the blister is a point of the first importance in cases wherein you hope to absorb and carry off the whole disease. A slow blister is worse than none; it is sure to irritate and increase the disease as sinapisms are known to do in similar cases. You are taken with pleurisy or peritonitis—some physicians would apply mustard with the hope of discussing a disease that is yet mild; but *væ vobis*, you must lose more blood on account of the mustard and resort to a blister in the end. The best dressing by far for the first few days, is plantain or cabbage leaves; but if the blister promise to run freely and not inflame, it may be soon dressed with mezereon or savin cerate, and if a copious discharge of pus be obtained, the disease will rapidly pass away. I can never forget the delighted countenance and applauding language of an old physician to whom I showed in my first year's practice, an ankle in this very condition. He had never known this use of savin, but from that day he used it freely and praised it highly. I had learned it from Crowther's work on white swellings.

Beware of warm poultices in the dressing of these blisters, for, as M. Baudens rightly says, "they favour in place of opposing the afflux of fluids to the part," and speaking of the long application of warm cataplasms, he says, "The long maceration the joint has been submitted to, deprives it of its elas-

ticity, gives rise to a pasty engorgement and predisposes to the formation of white swelling." If it is determined not to use savin, the blister should be healed by the mildest dressings, so that another may be soon drawn; thus the blistering may be conducted without any injurious irritation and made to absorb gradually and to carry off gently all the remaining inflammation. Dr. Rush used to talk and lecture much on his blistering point, and truly no idea or language can be more appropriate. The inflammation must be brought down to a low grade of action, or to a small periphery, so that a suitable blister will extinguish it at once, or so greatly diminish it that one or more subsequent blisters may be drawn with safety and success.

Of so much importance is it to guard against the irritation of blisters, that when I have applied them in the evening for critical diseases admitting of no delay, I have risen from my bed to bleed the patient if necessary at the time the plaster might begin to stimulate. When practicing in Northumberland, I have thus gone from one mile to four between midnight and morning to subdue the possible increase of fever either by the lancet or by additional doses of tartar emetic. By this means the evils of blistering may often be prevented; but as Hippocrates says, "the opportunity is fleeting:" if you wait till morning the pulse may be higher than it was in the evening and of course the blister has done much harm and no good. Sir John Pringle, in that early dawn of therapeutics, was better acquainted with this principle than many later authors in more enlightened times. *See* Part III. ch. ii. In the treatment of pleurisy when the bleeder was not present, he put on a blister and "was satisfied if the vein was opened before the flies had time to stimulate." I must observe however that his principle of practice was more commendable than the practice itself. More mischief can hardly be done by any remedy than by the drawing of a blister before the inflammation has been reduced to the blistering point. In Sir John's practice, the pain may have been scattered, but the inflammatory state remained and bleedings were then required which ought to have preceded the blister. It is very possible that when bleeding is inadmissible, nauseating doses of tart. emet. might be used to relax the system under the stimulation of a blister.

We have already entered our caveat against warm poultices in the dressing of blisters for sprains, and have approved M. Baudens' doctrine with respect to them; and lest any one should retort that our hot water may have the same bad effect, we must remind him, that we explode warmth after inflammation is formed. You may bathe a healthy limb in hot water for twenty-four hours and no engorgement will follow. I have bathed a great many sprained joints in the hottest water that could be borne without any of this evil. It is pain and inflammation that induce this engorgement, and these being both prevented by the hot bathing, this dreaded evil is prevented of course. But let this engorgement accrue and it will be greatly increased by much heat in any form. Yet there may be old cases in which hot water or steam may appear to revivify the torpid parts and render them sensible to

curative means. But suppose you are called to an old case of this leucophlegmatic torpidity, is there a better remedy than frequent blistering that discharges freely? B. Bell recommends the pouring of warm bath or Buxton water on these engorged and torpid joints, but there is far more vivacity in the operation of cantharides, and the discharge not only carries off the evil stimulation, but it empties the vessels and promotes absorption.

Salivation is a last resort in certain protracted cases of sprains. I was called to a case wherein the metatarsal ligaments had been sprained twelve months before and the patient was now unable to walk on that limb. Rest, elevation of the leg, low diet, frequent cupping, and blistering were steadily pursued for nine months with much advantage; but there remained a painful state of the parts that prevented all use of them, and this without any evident swelling. Having reflected on the all-searching influence of mercury when parts supplied with infinitesimal vessels are inflamed as the iris, ligaments, and serous membranes, I determined to try its effects on the inflamed metatarsus. Calomel with blue pill was given and no sooner was the mouth sore than my afflicted patient felt with joy that his foot was greatly relieved. The change for the better was instantaneous and permanent. He was severely salivated but without any detriment; and I am glad to say that mercury in my hands has not since that time, thirty-one years ago, transcended its just operation in a single case, and that I consider it as an invaluable remedy not difficult to manage. It will cure chronic rheumatism, why not therefore a chronic sprain? But as I am not writing a treatise on sprains, I shall now return to my subject.

In nearly all cases of external violence which do not implicate any of the viscera, the immediate use of hot water is, as I sincerely believe, the best as it is the surest cure and preventive of pain. If you are about to have a tooth extracted, hold hot water in your mouth both before and after the operation: if you must have a felon lanced, hold the hand in hot water for a long time both before and after the cutting. My first case of what is vulgarly called "inverted toe nail" occurred to me after the patient had thoroughly relaxed the part by warm poulticing for many days, and I did not proceed to the operation of splitting the nail and eradicating the offending portion, till he had bathed his foot a long time in hot water. I had been taught in Dorsey's Surgery that it was a most painful operation and I was therefore surprised, notwithstanding my hopes from the relaxation, to find the young man making very little complaint. I have several times performed this operation and owing as I believe to the hot bathing, I have not found it severe in a single case.

Now if I am not mistaken some reader will here exclaim, that even in inflammation, warm water agrees with some persons and cold with others. This fact however, I learned when a student from S. Cooper's prize essay on "Diseases of the Joints:" but however true this may be, I have not found

a single case of bruise or strain in which hot water, when used in time, was not a great present comfort and permanent benefit.

When can I use the limb, is the continued cry of the patient and the continual anxiety of the harassed doctor. Some men have been known to walk off the inflammation as others have been known to walk off the gout, but this is a very dangerous experiment. I once sprained my metatarsus, but as the pain was not intolerable, I rode abroad without any application; on my return, I went to bed with the remittent fever and the pain was soon gone and forgotten. When I came to use the limb after two weeks, it became painful; but as the bilious fever prevailed greatly, I had no time to think of self and nothing was done unless some rubbing with liniment. When the cold weather set in, the pain subsided gradually; but the warm weather of spring brought it back with distressing debility in the part. Thus going in the fall and coming in the summer, this infirmity continued to trouble me for four years. My limb was weak and painful every summer but not so bad as to send me to bed for a cure. I have seen many people triumph over the poor doctor by limping over the earth in great pain till nature cured the disease; but such wayward spirits always pay dearly for their folly, and they are sometimes finally brought to a bed of repentance.

ART. VIII.—*Report on Idiotic Crania, Idiocy, and Cretinism.* By SAMUEL KNEELAND, JR., M. D., Boston. Read before the Boston Society for Medical Improvement, Jan. 13, 1851.

BEFORE examining minutely the subject of idiocy, it is difficult to understand the extreme differences and inconsistencies of authors who have made it a special study, and the almost impossibility of arriving at any conclusions on the subject. The divisions and subdivisions of the various forms of idiocy are innumerable; varying according to each author's appreciation of the mental, moral, and physical phenomena presented. An enumeration, even, of the different systems would only confuse and perplex. A simple division may therefore be adopted, which, if inadmissible as a strictly scientific and accurate system, will suggest the most important considerations connected with idiocy.

Without going into particulars, we notice at once a great division of idiots into idiots from birth, and idiots from various causes subsequent to birth In the first, or *congenital* idiocy, there is an arrest of cerebral development in the fœtus, indicated by a too small brain and by the external development

and form of the anterior portions of the cranium; in the second, or acquired, *secondary* idiocy, the diminution or abolition of the mental powers depends on disorganization or disease in a previously normal and healthy brain, and may or may not be accompanied with change in the size and form of the cranium; this disease may be hydrocephalus, scrofulous hypertrophy, exhaustion from venereal excesses, hard study, &c., and various mechanical injuries. To the first class, we restrict the name of *idiots*, or what are expressed in the phrase "natural fools." To the second class, wherever idiocy is secondary, may be given, for want of a better, the name "*cretin*"—a term erroneously confined by many to a few miserable creatures in the Alpine and other mountain valleys. "Among their number, may be ranked" (in the words of Dr. Buckminster Brown) "the numerous individuals who are to be found scattered over every country, and who, under various names, such as innocents, simpletons, or idiots, are to be met with in the valleys of Vermont, New Hampshire, or Scotland, as well as Switzerland." Among the great class of cretins, we perceive also a natural division, according to the nature of the predisposing causes, into two orders: 1st. *Cretins*, or "fools," properly so called, in whom, while the brain is healthy at birth, there is some hereditary disease, as scrofula, syphilis, or other cause of weakness, which predisposes to idiocy during childhood, and which is frequently followed by it when external circumstances favor its development; this would include "cretins" from endemic causes in the valleys of mountainous districts, from hydrocephalus, or other chronic cerebral affections. 2d. Persons often seen in insane asylums, in whom the understanding is completely lost, without passing through insanity; whose minds were once strong, but have been destroyed by various excesses; to use an expression in Dr. Howe's Report, they are "demented."

Dr. Brown gives the following distinction between idiocy and cretinism: "In the latter, it is disease in the framework, it is the external avenues which are closed; in the former (idiocy), it is almost unchangeable mental conformation. Or, more properly speaking, in the latter (cretinism) it is an altered condition of the nerves, sensitive and motor, and of their peripheral ramifications; in the former (idiocy), it is to the great nervous centre alone that the evil is to be traced." He thus makes the pathological condition the element of difference; while we consider rather the nature of the causes as constituting the difference. These causes, congenital or secondary, may, we think, produce idiocy or cretinism, without reference to the pathological seat; in other words, that, though in idiocy the evil is seated in the great nervous centre (the brain), in cretinism this same nervous centre may be equally affected. It would seem, also, that the distinction by the causes offers better indications for prognosis and treatment than any difference in the pathological condition; as in the congenital affection, whether seated in the brain or in the nerves and framework, the prognosis would be unfavourable, and treatment probably useless; while in the secondary affection, where the cause is more generally appreciable, treatment will be more likely to be of advantage.

It is not easy to say much on the subject of idiocy without entering the domain of phrenology. However much we may affect to ridicule the idea that small heads are absolute indications of inferior intellect, we cannot deny a connection between the *relative* size of certain parts of the brain and the *degree* of manifestation of the intellectual, moral, and animal sentiments. In idiots, the forehead is unusually low, and the intellect proportionably dull, corresponding to the arrest of development of the *anterior* cerebral lobes.—In idiocy, there is no one peculiar form to the exclusion of others; there is every variety of intellectual and moral inferiority, which phrenology traces to a corresponding deficiency of brain. At any rate, Gall, Combe, and Spurzheim have added a great deal to our knowledge of mental affections, their causes, symptoms, pathology, and treatment.

There can be no doubt that deficient cerebral development is a cause of idiocy, independent of any actual disease. Numerous examples are given by authors of full-grown idiots with brains no larger than those of infants, with no other mark of disease about them. The predisposing cause must act during gestation—idiocy may be hereditary; children of besotted parents are very apt to be idiotic. Of this it is needless to quote examples, as the records of idiocy are full of striking proofs of this visiting on the children the sin of their parents. Various shocks to the nervous system of the mother have been known to cause idiocy: thus, Esquirol mentions that, during the exciting period of the French Revolution, many women brought forth idiotic children, who before and after that period had healthy ones. The intermarriage of near relatives is very apt to be followed by idiotic children. In 359 cases alluded to by Dr. S. G. Howe, in his State Report, 17 were *known* to be the children of parents nearly related by blood, and doubtless many more should be added. This makes (so far as such few cases go) the proportion of idiots from this cause one-eighteenth of the whole; and, considering the small ratio such marriages bear to the great mass of marriages, this proportion becomes of more importance. In this report, it is said: "Most of the parents were intemperate or scrofulous; some were both the one and the other; of course there were other causes to increase chances of infirm offspring, besides that of the intermarriage. There were born unto them 95 children, of whom 44 were idiotic, 12 others were scrofulous and puny, one was deaf, and one was a dwarf. In some cases, all the children were either idiotic or very scrofulous and puny. In one family of eight children, five were idiotic."

Idiocy (as has just been defined), being congenital, cannot be said to have any *exciting* causes, or rather these are the same as the *predisposing*. In all the forms of cretinism, in addition to the predisposing causes of idiocy acting on the mother during gestation, there are various exciting causes; as, endemic influences of mountain valleys, improper lactation, accidents of dentition, convulsions, grave diseases of infancy and childhood, falls on the head, &c., acting on a brain prone to derangement from hereditary causes of weakness.

In after life, a vicious system of education, a life of excess, may cause "dementia" in a perfectly developed brain. It has been said that continued compression of the child's head during labour may cause idiocy; and that any subsequent improper compression may have the same effect. This may be true as regards infants; but there are many facts against the latter. We know, for instance, that the artificial compression exercised by many nations (as the ancient Peruvians, the Natchez Indians, &c.), though distorting the cranium to a great degree, does not cause idiocy. The Peruvian forehead is as flat as the idiot's; but this *imitation* of nature is not followed by the natural consequence, idiocy.

According to the best authority, the number of idiots and cretins in Massachusetts must be at least 1200, in a population of one million, or about one in every 830 individuals.

There is no one peculiar form of idiotism, or cretinism. There is every variety and gradation, from the most degraded brutish idiot to the imbecile with a feeble, yet perceptible, intellect. It would be useless and tedious to give here anything like a full account of the different *symptoms*. It will be sufficient to allude to the stupid physiognomy, inability or indisposition to move, deformity, dullness or abolition of the senses, inability to articulate, involuntary discharges, insufficient and sluggish circulation, in idiots proper; and, in the various forms of cretinism (in many cases apparently synonymous with rachitis, scrofula, epilepsy, hydrocephalus), to the distorted features, convulsive movements, disgusting habits, depending on the activity of certain instincts unrestrained by moral or intellectual principles. In this class must be placed those whose idiocy depends on congenital absence of certain senses, which Broussais thought justified him in saying that persons born blind and deaf are necessarily idiots. But numerous exceptions show that the absence of these senses is not incompatible with considerable intellectual powers: the case of Laura Bridgman need only be mentioned to prove this.

Cretins and idiots usually have the animal and instinctive propensities active, even when there appears no spark of reason or human sentiment; but to these may be added various faculties, as memory, order, disposition to destroy, secrete, or steal. Some have considerable mechanical talent, *e. g.*, the cretins employed at Geneva in making parts of watches; some are gentle and affectionate, others the opposite; some have the organic functions perfect, others not. Dr. Rush says, "I once saw a man who discovered no one mark of reason, and yet possessed the moral sense and faculty in so high a degree that he spent his whole life in acts of benevolence."

This will suffice for the symptoms proper of idiocy and cretinism; but a curious fact may be here introduced in regard to the diseases of this class of persons, viz., that they are accompanied with very little reaction, and are very difficult to diagnosticate from the absence of the classical symptoms: in inflammation of the lungs, for instance, the circulation and respiration are very

little, if at all, accelerated; rusty sputa either do not exist, or they are swallowed as by children; all their diseases seem to take on the chronic and latent form; acute affections and cerebral inflammations rarely terminate their lives, and the gravest accidents and dangerous wounds are borne without any great constitutional disturbance.

It is the opinion of many authors that cretinism is one of the many forms in which the scrofulous diathesis shows itself; and certainly the external signs of the so-called "lymphatic temperament," the complexion, features, proportions, &c., are strongly in favour of this view. In idiots proper, the nature of their affection must be attributed rather to an arrest of development than to any constitutional disease, though upon true idiots may be found marks of scrofula. As any well-ascertained connection between cretinism and other disease is important as regards treatment, the relation of rachitis to cretinism may be here mentioned. In the "Dictionary of Medical Sciences" of Berlin (according to Mr. Güggenbuhl's First Report, pp. 47–8) it is said that autopsies of cretins prove that their cranial bones have undergone a softening similar to that found in rachitis, and evident marks of this disease have been found in other parts of the skeleton; the symptoms from the beginning are similar, but not precisely alike, in cretinism and rachitis. Without admitting absolute identity, the authors think that the differences depend on this, "that cretinism, taking its departure from the cranium and brain, soon attacks the physical and intellectual powers; while rickets, commencing in the trunk and the extremities, may make great progress before exciting any grave trouble in the system." A careful examination made by the physicians of the Canton Vallais, in Switzerland, has shown (according to the above report) that at least one-half of the cases of cretinism there commence by the symptoms of rachitis, principally softening of the bones. According to Esquirol, and others since his time, cretinism is usually developed between the second and fifth years, and almost never after seven years of age.

The pathological anatomy of idiocy and cretinism presents very various conditions. In true congenital idiocy, we find a brain (healthy perhaps) too small for the full manifestation of the moral and intellectual faculties; there is an arrest of development of the anterior and middle portions, corresponding to the seats of these faculties as given by phrenologists.

This deficiency in the anterior region of the skull is well shown by the series of casts and crania exhibited in the following tables. Measurements have been carefully taken in three directions, which will be compared with normal heads, in order to sustain the exactness of Dr. Gall's law in reference to the dimensions of the skull necessary for the full exercise of the faculties.

TABLE I.—*Idiots.*

Sex.	Age.	1st measurement.	2d measurement.	3d measurement.	Where found.	No.
Male,	25	15 inches.	10 inches.	9 inches.	No. 407, Mass. Med. Col.	1
Female,	17	15 "	10 "	10 "	No. 406 " " "	2
"	60	18 "	11 "	10 "	No. 89 " " "	3
Male,	Adult,	18 "	10 "	10½ "	No. 89 " " "	4
"	"	18 "	11 "	11 "	No. 90 " " "	5
Female,	"	18 "	10¾ "	10½ "	No. 91 " " "	6
"	"	18¼ "	10 "	11 "	No. 92 " " "	7
"	"	17⅔ "	10⅔ "	10 "	No. 93 " " "	8
—	?	14 "	8½ "	8¾ "	No. 94 " " "	9
—	6	14 "	8¼ "	8¼ "	No. 96[a] " " "	10
—	21	14½ "	9 "	9 "	No. 96[b] " " "	11
S. Walker,	6	—	10⅛ "	10½ "	Dr. Howe's Report.	12
G. Rowell,	9	14 9/10 "	10⅛ "	10½ "	" " "	13
E. S. Field,	7	17 "	11¾ "	11 1/10 "	" " "	14
Charles,	16	16 "	8 "	9 "	Institution at S. Boston.	15
Rowell girl,	8	15½ "	10¼ "	10½ "	" " "	16
Aztec boy,	7	12 "	7½ "	7½ "	Described by Dr. Warren,	17
Aztec girl,	5	12 "	7½ "	7½ "	p. 285 et seq. of this No.	18

The first measurement is the circumference of the cranium just above the superciliary ridges, passing through the most prominent part of the occiput; the second is from the root of the nose to the occipital protuberance, over the top of the head; the third is from one auditory meatus to the other, also over the top of the skull. Dr. Gall has laid down the rule that when the first is less than seventeen inches, and the second less than eleven inches, or even twelve, there is always greater or less stupidity; that, when the first is eleven to thirteen inches, and the second eight or nine, the intellectual faculties cannot be exercised. With reference to this point, Andral, as quoted by Dr. Combe (on Insanity, p. 264), says: "As a general rule, it may be stated, also, that, when the circumference of the head is only between twelve and fifteen inches, the mental condition can be but little above idiocy. Eighteen inches may be regarded as the circumference necessary for intelligence; at twenty, the mental faculties are still more developed; and from twenty to twenty-two inches, they attain their maximum power."

Eleven of the above eighteen idiots are doubtless adults; or, if not, it is of little consequence, as it will be seen in the next table that these measurements are less than the normal measurements of a child four years old. For the first (the circumference) the smallest is 14 inches (with the exception of the Aztec children), and the largest 18¼—all below the size necessary for much intelligence; the second varies from 8¼ to 11¾ inches; and the third from 8¼ to 11¼.

It may be well to glance here at some of the most prominent points exhibited by these casts and crania of idiots, which, to one conversant with phrenology, would suggest many very interesting questions. All show a preponderance of the animal propensities, some of one kind, some of another. Nos. 1 and 2 were noted for pride, self-esteem, and combativeness. No. 3, a

woman sixty years old, who during her youth had the cerebellum active, had sufficient locality to wander from home and find her way back again; she was very fond of colours, and submitted to be cast on receiving a gaudy-coloured shawl. Nos. 4 to 8, inclusive, were members of one family, all of whom, seven in number, were idiots; their parents were frequently in a beastly state of intoxication. Nos. 5, 6, 7, and 8, so far as the relative size of the various regions of the skull was concerned, had phrenologically good heads, but their absolute size was too small for intelligence. Nos. 9 and 10 approximate very nearly to the orang outang, as will be seen by reference to the second table. No. 10, the famous idiot of Suabia, six years old, by the flat forehead, vertex, and occiput, and prominent features, resembles much the so-called Aztec children, of whom we have given the measurements in Nos. 17 and 18. No. 11, the idiot of St. Denis, is of good shape, but of remarkable smallness, considering the subject was twenty-one years old. Nos. 13 and 16 are brother and sister, and are interesting as showing one of the causes of idiocy, viz., intemperance in the parents. On the authority of Mr. Richards, we may state that the parents of these children have had healthy and normal offspring at periods of their lives when intemperance was not their prominent vice, and that, too, both before and since the birth of these, who were born while their parents were addicted to strong drink. No. 16 also has club-foot. No. 15, lately received at South Boston, is a most curious-looking idiot; sixteen years of age, of large frame and great strength, his broad shoulders surmounted by a small head covered with bristly red hair; his lower extremities are weak, and his gait shuffling; the circulation is very languid, as it generally is in idiots, indicated by the lividity and coldness of the lips and hands; his violent gestures and uncouth noises have been considerably modified by kind treatment during his stay of only a few weeks. Of the Aztec children we shall speak below.

TABLE II.

	1st measure.	2d measure.	3d measure.	Where found.	No.
Average skull,	21 inches.	12½ inches.	12½ inches.		19
Carib skull,	21¼ "	12 "	12 "	No. 359, Medical College.	20
Child 5 years old,	18⅝ "	12 "	12¼ "	Nat. Hist. Society.	21
" 4 " "	18½ "	11½ "	12½ "	" " "	22
" 3 " "	18 "	11¼ "	12 "	" " "	23
" 2 " "	17⅞ "	12 "	12⅜ "	" " "	24
" 1 " "	17⅝ "	11¼ "	12¼ "	" " "	25
" at birth,	12¾ "	8 "	8 "	" " "	26
Orang Outang,	13⅛ "	8 "	8½ "	No. 97, Medical College.	27

From these tables, it will be perceived that all the idiots had skulls too small for a brain sufficient for a full manifestation of the intellectual powers; that they had skulls smaller than an average child of five years of age; that two, one adult and the other seven years old, had skulls inferior to a child two years old; that six were inferior to a child one year old in measurements,

though the ages ranged from six to twenty-one years; that four were not above the new-born child as regards cerebral development; that a diminution of three inches in the first measurement, and one to two inches in the second and third measurements, is almost sure to be followed by greater or less imbecility. In the second table, by comparing the flattened Carib skull with an average skull, we see that, though the form is changed, and the forehead much flattened, the capacity of the cranium is unchanged; showing that distortion is no indication necessarily of imbecility, unless confirmed by actual measurement. There would, perhaps, be a difference of half an inch in different specimens of skulls of children; but a single average specimen is sufficient to show the inferiority of the idiot skull.

We see, then, that below a certain size of the brain, there is idiocy; and we also see that the actual size of idiotic brains varies. An idiot with a small brain (*e. g.* No. 13) may be superior to one with a larger brain (*e. g.* No. 14); in both, idiocy arises from a too small brain: but why should the smaller be the better brain? It is due to the different conditions of the bodily organization, or *temperament.* Dr. Howe, speaking of these two boys in his report, says: "The first named boy, whose head is so much smaller than the second, and, indeed, than any boy in the school, and who has such a striking resemblance to the ape tribe, manifests much more vivacity, activity, and intelligence than the second, and, indeed, than several of the others—and precisely for the reason that the man of 'blood,' or fine temperament, is superior in these respects to the man of coarse organization—though his brain may be smaller. The boy's body is of a much finer organization, and his brain, doubtless, is so likewise."—p. 57.

The deformity of idiot crania affects principally the anterior and superior portions; while the parts destined for the animal propensities and instincts are well developed. This we should expect from an arrest of development; as it is admitted that, when the growth of the brain is natural, the anterior portions are hardly formed at a time when the convolutions of the other regions are comparatively well developed—showing the order and preference of nature in forming first the portions destined for the vegetative functions.

The fact that in idiots the animal, instinctive, and emotional sensations are usually active, is interesting in connection with certain views regarding the physiology of the brain that have of late years been generally received. At the base of the brain, distinct from the cerebral hemispheres and the cerebellum, is a series of ganglia, which have been called "sensory ganglia:" these are the corpora striata and the thalami optici; and the olfactive, optic, and auditory ganglia, which do not interest us at present. Though these have commonly been considered as mere appendages to the hemispheres, Carpenter maintains that they have an independent character, from the large quantity of vesicular matter they contain, and have special functions assigned to them. As we descend in the animal scale, we find these ganglia increasing at the expense of the cerebral hemispheres; we also in the same ratio find a

less and less display of intelligence and will, and a greater predominance of the motions arising from instinct, that is, without any adaptation of means to ends. As in animals, so in man; in proportion as the reasoning powers are deficient (for it cannot be doubted that animals have a kind of intellect comparable with the reason of man), the instinctive impulses become stronger. As in the lower animals, so in the human idiot, the instinctive impulses, situated in these sensory ganglia, are strong, for his preservation from danger, and the supply of his necessary wants; though, in this respect inferior to the animal, the human idiot, from want of power over the nerves and muscles, cannot always supply even his simplest wants. In these sensory ganglia is the seat of the instincts of animals, and the corresponding emotional actions in man: *to* the *thalami optici* as the focus of *sensation*, and *from* the *corpora striata* as the focus of *motion*, go the nerves which communicate the sensations, and the nerves which excite the motions, of instinctive and emotional actions. These actions being generally the most marked in idiots, we should expect to find these ganglia well developed in this class—not necessarily enlarged; as, if they were of the natural size only, they would undoubtedly be more active in proportion to the deficiency of the cerebral hemispheres. Whether pathological anatomy has decided this point, we are unable to say.

Phrenology has always claimed a peculiar connection between the cerebellum and the *genital* system, and has adduced the frequent, perhaps general, activity of these functions in idiots in support of this view. Dr. Carpenter states that the weight of testimony, from comparative anatomy, experimental physiology and pathology, is decided in regard to the connection of the cerebellum with the regulation of the *motor* function; though he does not totally deny the opinion of Dr. Gall. He adds, "It would seem by no means improbable that the lobes are specially connected with the regulation and coordination of movements; whilst the vermiform processes, which are very large in many animals in which the former scarcely present themselves, are the parts connected with the sexual function."

There is in idiocy an apparent contradiction as far as the cerebellum is concerned, inasmuch as there are frequently in the idiot strong sexual propensities, with a great want of order and control in the voluntary movements, and *vice versâ*. To explain this would require a combination, to say the least, of the phrenological doctrine with the views of Carpenter and others—and perhaps the entire separation of the sexual functions from the cerebellum.

It has been already seen that the idiot of Suabia (six years old) resembled very nearly, in shape and proportion of the skull, the Aztec children; and the phenomena of idiocy have now been sufficiently detailed to enable us to say why and to what extent these children are idiots. The measurements of the Suabian head are 14, 8¼, and 8¼ inches; the Aztecs have heads as small as new-born children, viz., 12, 7½ and 7½ inches, considerably smaller than the Suabian head. These children are now known to be dwarf specimens of a

Central American race of Indians, such as may occur in any race; though no dwarfs on record have equalled these in the smallness of their crania. The brain seems merely too small, without any great disproportion in any of its parts; though, as usual, there is a relative inferiority of the anterior lobes, which may partly be accounted for by external circumstances with them favouring the development and exercise of the animal functions more than the intellectual. It is almost a harmonious want of development (if the expression be allowable), which gives them more the appearance of men in miniature than of idiots, though from the dwarfed condition of their brains they are necessarily partial idiots. The prominence of their features, though considerable, is exaggerated by their retreating foreheads; their bodies and extremities are well formed; they have good command over their muscles, and are quite agile, being continually in motion, differing in this respect from the majority of idiots. They certainly articulate words, and make a variety of animal-like noises, expressive of their wants, of anger, of joy, of surprise, and of other feelings, which imply considerable intelligence. They understand speech in others to a certain extent, as they obey like a little child; so that, as regards speech, as much seems to depend on an abnormal condition of the vocal organs, or the nerves supplying them, as on any intellectual defect. The senses are acute, especially sight and hearing; they are very attentive and curious, eagerly examining every new object. They in part feed themselves, and can chew solid food; they are decent in their habits, affectionate towards each other and to strangers; and they manifest desires and a degree of knowledge which place them high in the class of idiots, if not quite above them. The fact that the boy drivels, so characteristic of idiocy as to have become a byword, loses some of its significance when it is known that he is undergoing the process of his second dentition. Though they are dwarfs and idiots, yet they cannot be placed in the lowest classes; they exhibit such evident signs of intelligence, and are wanting in so many of the usual symptoms of idiocy, that we have little doubt that a judicious system of education would enable them to take a much higher rank among human beings than they now occupy.

Idiocy is, then, the inevitable result of a brain under certain dimensions. There are various lesions mentioned by authors as found in idiotic brains; among others, the small number and flatness of the convolutions of the cerebrum and cerebellum generally. Solly quotes from Breschet the case of a girl, fifteen years of age, in a complete state of idiocy, in whom the two anterior lobes of the brain were wanting; at the bottom of and behind the membranous pouch which replaced them, the corpora striata were seen exposed. In some cases, the brain seems hypertrophied; in others atrophied, with narrowness of the ventricles, so much insisted on by Esquirol; the convolutions may be found hardened, irregular, and discoloured, which Rostan thinks the result of softening followed by absorption: these lesions sometimes reach the optic thalami, the corpora striata, and the corpus callosum, and must have

depended on arrest of development or intra-uterine disease of the brain, as they would soon have proved fatal if arising after birth.

Spurzheim says, "The brain of an idiot never resembles that of a sane person. Its form or texture is different." Even when the skull is well formed, as it is in many idiots from birth, the brain may be very small, and the interval be made up by a thickening of the bones. He mentions the skull of an idiot boy, which was three-fourths of an inch thick. The atrophy of the brain is usually accompanied by the atrophy of the extremities. An idiot examined by Esquirol presented the following symptoms, mentioned in Spurzheim's work on Insanity (pp. 243–4). The limbs of the right side were greatly atrophied, shorter than the left, and incapable of movement; the limbs of the left side were natural, and capable of voluntary motions; the head was small, but not deformed. On opening it, nearly all the gray cortical substance on both hemispheres was found wanting; instead of convolutions, there were only small irregular granulations; in regard to the white substance, that of the right hemisphere was natural, but in the left it was almost entirely wanting, being occupied by a sac of transparent fluid. This case has an interesting physiological bearing, as showing that the gray substance is not essential to voluntary motion, but is, as Sir C. Bell supposed, the seat of the intellect.

The pathological anatomy of "cretinism," by which is here understood any idiotic condition from causes subsequent to birth, must of course be very various. Only the most common and evident will be mentioned, and such as are suggested by those casts of hydrocephalic idiot heads in which the distortion reminds one of the Natchez Indian heads. The dimensions are very great, as will be seen from the following table:—

TABLE III.—*Hydrocephalic Heads.*

	1st measure.	2d measure.	3d measure.	Where found.	No.
Pimault.	21 inches.	15½ inches.	16 inches.	Med. College, No. 86	28
Do.	19 "	12 "	15 "	" " " 87	29
	24¾ "	14 "	15½ "	" " " 106 *a*	30
	25½ "	17 "	18 "	" " " 107	31
Thick skull	25 "	15½ "	16½ "	" " " 345	32

By comparing these with an average skull (No. 19), we see the other extreme of size in idiot heads. We shall not here detail the symptoms of chronic hydrocephalus, nor its morbid appearances, but only allude to one condition of the brain connected with the thickness of the cranial bones usually met with after the absorption of the cerebral fluid. The thick skull (No. 32) was that of a woman, who, at the age of fifty, enjoyed the use of all her faculties; from this time, her skull gradually thickened from disease, and her faculties became impaired in the same degree, till she died, at the age of sixty. The average thickness is about one inch; it is thickest at the sides and posteriorly, where it is an inch and a quarter thick; its thinnest part is one-half an inch thick. In the plates recently published of the diseased bones of the Dupuy-

tren Museum in Paris, another specimen, equally remarkable, is accurately represented.

In some cases, thickening of the skull is undoubtedly the result of increased action in the vessels of the head. Dr. Combe noticed it in cases where there had been unusual activity of certain faculties, with increased cerebral circulation; and this is still more common in actual insanity. He mentions (on Mental Derangement, p. 259) a case where the brain had diminished in size in proportion to the increased thickness of the skull, and where the frontal convolutions, corresponding to the thickest part of the frontal bone, were proportionally smaller than in the rest of the brain. He gives several cases, in all of which the cerebral vessels were gorged with blood. Thickness of the skull may also occur in other diseases of increased action, as, for instance, in erysipelas of the head (*op. cit.* p. 262), in which there was unusual thickness in the occipital region. In some cases of thickening, the diploë is perfect, the increase being in the two tables; but in others everything is confounded in one thickened mass, which appears to have been the case in our specimen; the bone is said sometimes to be of an ivory hardness. As we know exostosis is the result of a limited periostitis, there is no improbability in supposing that this general hyperostosis is the result of a general inflammation of this membrane. It would be difficult to account for it satisfactorily, when it occurs on the inner table, on any other hypothesis.

Chronic hydrocephalus affects the bones of the head in two ways: Either the bones are thinned and softened from imperfect ossification, or they are thickened. According to Andral, this thickness is not accompanied by any great increase in weight, the compact bone being replaced by a spongy texture. The cause of thickening is supposed by Andral to be this: the quantity of liquid having reached its maximum, if life be prolonged, it begins to be absorbed; as the liquid disappears, in order that there may be no interval between the brain and bone (ossification preventing the depression of the bone towards the brain) new osseous deposits must be made on the internal surface of the cranium, according as the brain assumes its natural dimensions; so that externally the head preserves the hydrocephalic size, while the cranial cavity has only its normal capacity. When the effusion separates the bones, leaving a membranous space between them—if the subject lives to be adult—these membranous spaces are filled by ossa Wormiana, as has been shown by Rudolphi and Breschet; these are chiefly found at the superior angle of the occipital bone and along the lambdoidal suture, where separation would very likely be greatest, and here also is generally found the greatest thickening. It is not meant to be understood that only the above cause is concerned in the production of these supernumerary bones; but this is only one of many, though a more frequent one than is usually admitted.

From whatever cause the thickening proceeds, the manifestations of the mind are more or less disordered. Out of 216 cases of insane persons, Gredin found 167 who had thickening of the skull—seven-ninths of the whole.

These hydrocephalic heads show various shapes. Pimault had a flattening from front to back, like the Natchez head; of her it is said that she had shown a great deal of pride.—No. 30 was a well-formed head, though enlarged in all its diameters.—No. 31, the largest of all, was a child two or three years old, with great prominence of frontal region and vertex. An examination of the brain shows an anterior arrest of development; and a great flatness, after the evacuation of the water.

It will be observed that in secondary idiocy there is no arrest of development, but a disorganization and disease in a brain previously healthy. Next to hydrocephalus as a cause of idiocy may be ranked the cerebral lesions of "cretinism," in its restricted sense. Dr. Pellissier, of Geneva (in Dr. Güggenbuhl's First Report of the Abendberg Institution, p. 49), considers a false hypertrophy of the brain as the most probable cause of cretinism. This organ may undergo a kind of vesicular extension, without an actual serous effusion, which diminishes and flattens the convolutions; in other words, hypertrophy with dilatation. In this stage of the affection, the cranium is atrophied by this dilatation, the sutures are separated, and the fontanelles are widened. When the dilatation ceases, the brain again subsides, and the bone in proportion becomes hypertrophied; he thus accounts for the thickening of the skull, which he says almost always exists in cretins of an advanced age. In this period of false cerebral development, the intellectual faculties are greater than in healthy children of the same age; this makes the subsequent decline the more marked and painful.

The cretin head, as will be seen by comparing the following table with the preceding, is larger than the average head of the same age; as would be supposed from the hypertrophy which the brain undergoes. The measurements of the first five skulls are taken from Dr. Güggenbuhl's Report above quoted; the last is No. 405 in the Medical College Collection.

TABLE IV.—*Cretins.*

	Age.	1st measure.	2d measure.	3d measure.	No.
Marie S.	2 years.	16 inches.	13⅜ inches.	10½ inches.	33
Claudine S.	2 "	18 "	14¼ "	12¼ "	34
John F.	3 "	20¼ "	16 "	9½ "	35
Eliz. Z.	3 "	19¼ "	13¾ "	12⅜ "	36
Martin D.	5 "	20¾ "	14⅞ "	10 "	37
Cretin of the Vallais	aged	20½ "	13 "	11½ "	38

In the last skull, the size is about the average; the antero-posterior diameter is somewhat longer, while the third measurement is correspondingly less; the bones are heavy, and, as far as can be judged without section, thicker than usual, analogous to the thickening of rachitic bones. On the sides of the occipital bone there is considerable prominence, with a depression on the median line; perhaps to be explained by the cerebral hypertrophy (of Dr. Pellissier) expanding the bones at the points of least resistance on the sides, the middle

being supported and strengthened by the internal ridge for the sinuses and falx.

There is no need to more than mention the other forms of secondary idiocy, from various cerebral diseases, recognizable after death; and those more insidious forms from mere nervous exhaustion depending on severe study, venereal and other excesses, which may or may not elude our post-mortem search. These have been recognized as forms of dementia. One of the most common is believed to be from the premature tasking of the infant mind by our forcing-system of education, which, if it do not end fatally by cerebral disease, is liable to be followed by diminution of the intellectual powers, and even by hopeless idiocy.

The treatment of the various forms of idiocy and cretinism may be summed up in a few words. In an adult, who has been an idiot from birth, there is but slight hope of any great amelioration, as far as the brain is concerned, though the general health may be improved. All authors agree that *physical* treatment is most to be depended on, viz., pure air, gymnastic exercises, proper diet, and cleanliness. Medicines, except to correct ordinary symptoms, have not been attended with success. As a general stimulant to the nervous system, electricity and electro-magnetism would seem peculiarly applicable. Moral means are also of great value, as gentleness, kindness, and affectionate treatment.

As the animal instincts are here developed at the expense of the intellectual and moral sentiments, it becomes an object, if possible, to restore the equilibrium between these; if the higher feelings can be called into play, their animal nature will be proportionally lessened, as it were, by a kind of cerebral revulsion. The success of teachers has been found to be proportioned to their tact in interesting and fixing attention, that the rudiments of knowledge may be communicated; if *one* step be made in the right direction, it is comparatively easy to keep them in the path. Says Dr. Howe (page 54 of his Report), in the idiot, and in every one, "that which is, by nature, a little the strongest, becomes, *by exercise of its functions*, and by *neglect of exercise* of the functions of other parts, *very much* the *strongest*, until it utterly prostrates and masters them."

Dr. Combe (*op. cit.* p. 224) remarks that the excitement of fever may restore the idiotic to reason. When the idiocy arises from cerebral inaction or weakness, the febrile paroxysm raises the activity of the brain to the height requisite for a vigorous exercise of its functions; when the paroxysm is over, the mental phenomena return to their former level. How far an artificially produced febrile paroxysm, as by the agency of cold water, may be of advantage, would seem worthy of trial; the much abused "vis medicatrix naturæ" might thus be stimulated in a natural and efficient manner. That disease, artificial or natural, may be of advantage in the various forms of *dementia*, may be conceived from the following analogous facts mentioned by Dr. C. H. Stedman in the last Report of the Boston Lunatic Hospital (p. 18).

"One patient, an Indian, in good bodily health, afflicted with chronic mania, and who had been insane for three years, was seized with the severest form of dysentery which has ever come under my observation. While in the height of the malady, his mental operations began to undergo a change. After which, his mental and bodily convalescence went on together, and resulted in the perfect restoration of the entire man. Another, a man who had been insane over twenty years, and quite a difficult one to manage, owing to his strong mischievous propensities, was attacked with the same affection, and remained dangerously ill for some weeks. He recovered from dysentery, and now no patient in the house is more quiet and controllable. Indeed, to many he would appear mentally sound."

If we examine the chemical constitution of the brain, we shall find a difference between the idiot and the normal condition, which it may be well to mention. From the researches of M. Couerbe, it appears that the proportion of phosphorus is much less in the idiot than in the normal brain. According to Carpenter, the contents of the nerve-cells and tubes are chiefly phosphorized fats; and he regards them as the active agents in the operations of the nervous system. The amount of phosphorus is greatest at the period of greatest mental vigor; in idiocy, the proportion is one-half less. This may indicate the internal exhibition of phosphorus in idiocy; it has long been known as an excellent general stimulant of the nervous system.

In Dr. Güggenbuhl's Report, there are detailed several cases of great improvement in cretins from the treatment followed at the Institution on the Abendberg; this treatment is purely physical. In No. 33, after a residence of two and a half years, there was an increase in the first measurement of $2\frac{5}{8}$ inches; with a corresponding improvement in the intellectual faculties. For further details of a most satisfactory nature, this Report may be consulted with advantage.

Any interested in the improvement of idiots will be greatly astonished as well as gratified by a visit to the school at S. Boston, under the care of Mr. Richards. What volumes could not convince us of before the actual experiment, they will there acknowledge, viz., that kind treatment, perseverance, proper food, exercise, sports, and a judicious mental discipline, will do much to improve the condition of the hitherto abandoned class of idiots.

It has been seen that idiocy and partial talent may exist together, where, with a generally defective brain, certain portions are well developed; and in such cases, where the size and form of the head are changed, accurate measurements may be of great importance in a legal point of view. The law of Dr. Gall, then, may be repeated, in conclusion, viz., that when the first and second measurements of the head (as above defined) are below 17 and 11 inches, there is always greater or less stupidity; that when the first is from 11 to 13 inches, and the second 8 or 9, the condition can be but little above idiocy.

Boston, *Jan.* 1851.

ART. IX.—*Case of Hæmoptysis Neonatorum.* By CHARLES G. ADAMS, JR., M. D., of Keene, N. H.

AMONG my pathological records for October, 1850, I find the following case, which may be considered not altogether unworthy of notice.

Mrs. ———, ætat. thirty, in stature small, but of tolerable constitutional vigor, was confined prematurely with her second child at the completion of a gestation of seven months and a half. Labour natural, child (female) of normal size, funis around the neck, respiration established artificially.

The respirations continued feeble the first twelve hours, with no pulse at the wrist. The child, however, nursed and cried well, had natural evacuations from bowels and bladder, and soon put on a more favourable aspect, extremities becoming warmer, pulse being perceptible at wrist, and respiration rather more free. But about an hour before death, it had a sudden discharge of bright, arterial blood from the mouth and nose, with symptoms of suffocation, which led the nurse to think it was dying. It rallied, however, and respiration again became comparatively easy.

After an interval of thirty or forty minutes, it suffered another similar attack of the hemorrhage, under which it rapidly sunk, just twenty-four hours after birth.

The quantity of blood lost might have been five or six drachms. The mother had a good "getting up." Her first labour, which was premature, occurred ten months previously, at the commencement of the ninth month, the child dead-born, and in an advanced stage of putrescence.

The father is rather slender, inclined to pulmonary difficulty, having suffered from one or two attacks of hæmoptysis.

The day following I made an examination, thirty hours *post-mortem*, and these are the appearances that were presented.

Exterior habit.—The skin has universally a uniform yellow tint. Upon neck and upper extremities numerous petechiæ, or circular, livid spots of extravasated blood, varying in size from a diameter of half to three or four lines. These were observed before death. *Abdomen* much distended, but flat on percussion. No rigor mortis.

Encephalon not inspected.

Thorax.—Thymus gland as usual very large, appearing perfectly healthy. The lungs of a very dark livid colour, and solid, except a small portion on their lower anterior edge, perhaps one or two cubic inches, which was of a more healthy hue, crepitated under pressure, and alone had a specific gravity lighter than water. Upon incision the solid portion presented a surface almost black, glistening like the cut surface of a coagulum, though less smooth and uniform, which led me to pronounce the lesion without hesitation extensive pulmonary apoplexy. The bronchia, where they could be traced, were filled with a

bloody, frothy mucus. No tubercles could be anywhere discerned. In the pleural cavities, a small quantity of straw-coloured serum.

The *Heart* contained dark, fluid blood; parietes tolerably firm. Foramen ovale closed by its diaphanous valvular membrane. Ductus arteriosus remained pervious.

Abdomen.—Upon laying back its parietes, the liver and spleen concealed from view every other viscus, filling almost the entire abdominal cavity. Peritoneum natural.

Stomach.—Exterior or peritoneal aspect presented numerous lengthened, livid spots of extravasated blood, from one to three or four lines in width, partially encircling the viscus, and more abundant and larger towards the cardiac extremity. Considerably distended with gas.

Intestines.—Contracted generally; also presenting externally the dark spots of extravasated blood, circular or oval in form, many three-quarters of an inch in diameter, interspersed at somewhat distant intervals throughout the entire tract of the alimentary tube; more numerous, however, in the small intestines, which had a universal pink hue, and in some portions of considerable extent, a very dark colour.

Gastro-enteric mucous membrane.—The stomach contained three or four ounces of dark-coloured, sanguineous fluid, with one or two black coagula floating in it. Its mucous coat sufficiently firm, of a bright rose colour, from the evident engorgement of minute capillaries, and in some places quite dark. In its thickness and beneath it existed the ecchymosed spots above noticed. No coagula were found adherent. The small intestines contained a considerable quantity of thick, bloody mucus, having a slimy aspect and feel. No natural appearance about the contents of the intestines anywhere. Their mucous membrane was considerably softened in places, having a general aspect like that of the gastric: the whole simulating most exactly a case of gastro-enteritis of high grade, in the adult. No ulceration, however, was discovered.

The *Mesenteric glands* were numerous, enlarged, and of a rose colour.

Liver of the normal proportional dimensions: colour and consistence natural, though somewhat congested. Gall bladder of a very light colour, and comparatively empty. Supra-renal capsules and kidneys normal, the latter being distinctly lobulated.

Spleen in colour and consistence natural, but in size somewhat exceeding the average weight of that organ in the *adult.*

No other remarkable appearances.

The foregoing case presents for consideration the following interesting phases: 1. The jaundice. 2. Its connection with purpura (porphyra) hemorrhagica or hemorrhæa petechialis. And 3. The occurrence of the latter at this early period of life. With a brief notice of each, I shall submit the case.

First, then, of the jaundice.

The saffron hue so common to new-born infants has won for itself a place

in the nosology of authors—the icterus neonatorum. At the same time, very many are disposed to dispute its claim to the designation of *jaundice*, ascribing it either to the hyperæmial condition of the whole surface at birth, a state analogous to a bruise, which terminates by a change of hue from that to the natural flesh colour, or to that never-failing resource, "a cachectic condition of the blood"—both entirely unconnected with any hepatic derangement; and asserting that *true* jaundice at this period of life, though it is not exempt from it, is of rare occurrence.* While, on the other hand, we see another class of observers† assigning its pathology—more properly, as it seems to us—originally to some hepatic or biliary trouble, in consequence of which the bilious fluids return to be mixed again with the blood, thus occasioning the yellow colour; speculating much upon the route they take, yet after all leaving future observation to decide the *point d'appui* of functional deviation.

This would seem to be the opinion of Richter, supported by others‡ of his own time, who imputes the jaundice to "a stimulus or irritation acting upon the hepatic system, which prevents the afflux, secretion, and excretion of the bilious fluids; or rather so deranges the circulation in the hepatic system, that the several parts do not reach their destined places according to the laws of health, but are again mixed with the general mass of fluids." Another argument also in its favour is the sudden change which takes place in the circulation of the liver at birth.

The source of "stimulus or irritation" in these cases would seem to be the sudden change of material in nutrition, the mother's milk, which must act powerfully, though in a varying degree, upon the nice sensibilities of infantile life.

The existence of *true jaundice, imprimis*, we have deemed it important to determine, in the consideration of its connection with hemorrhage in new-born infants.

Now, we know, from observation, that adults affected with jaundice are exceedingly prone to the most inveterate hemorrhages from the slightest wound; that the analysis of blood in cholæmia§ gives in some cases the presence of bilic or bilifellinic acid, and in all a great decrease in the red corpuscles and fibrin, a decrease in the normal proportions of either predisposing to hemorrhage;‖ also that, by the presence of the abnormal ingredients, the blood is rendered highly alkaline, which has been said to diminish its tendency to coagulate by altering the character of the fibrin, and thus to favour exhalation.

Such are the phenomena which attend jaundice in the adult, and one of the most distinguished pathologists of the present day has remarked that, of the numerous cases which have fallen under his observation, of hemorrhage in new-born children, either from the umbilicus or into the internal organs, very

* Sauvages, Mason Good, Dewees, Underwood, Watson.

† Cutler, Stokes, Mackintosh, Gregory, Wood, Evanson, and Maunsell.

‡ Selle, Vogel, Chaux, Vogler, and Bang.

§ Simon. ‖ Magendie and Andral.

many have been *associated with jaundice.* In this case, then, a limited personal experience becomes valuable, endorsed by such high authority.

Purpura hemorrhagica, a case of which affection the foregoing must be considered from its strong analogy in phenomena and morbid appearances, is not uncommon in children and youth, happening, indeed, most often in the young, but rarely at this early period of existence.

Out of seventeen cases which occurred to Willan, three were infants under a year old. And never, with a single exception,* have I seen an allusion to this disease as intra-uterine or congenital.

In this affection, we find all the morbid appearances detailed above, not omitting *jaundice,* which, though not invariably present, is quite common, viz., with external and internal ecchymoses, effusion of blood into the stomach and intestines (associated even with enteritis), pulmonary apoplexy, disease of the liver and hypertrophy of the spleen,† sometimes even much more extensive lesions. Rayer observes, however, that pulmonary and intestinal hemorrhages are most frequent in *adults*—with whom all writers affirm that it is not uncommonly an immediate cause of death.

The master-mind of antiquity was very intent "to clear the blood of its acrimony, its vicious humours, rough acidity, fetid alkali, and rancid oil‡ "by his το ενορμων of organic fibre! So also, in this affection, Brown was impatient to add an extra stimulus to the blood to counteract "the atony and laxity of the vessels which permitted the finer parts of the fluids, sometimes serum, sometimes red blood, to flow through their patulous orifices."§

And since their day, while one clings to the theory of spasm of the capillaries, and another to that of paralysis of the venous system,‖ most are compelled, both humorists and solidists, to unite in this, that the phenomena in this disease are to be ascribed to "a disturbance of the healthy relations of the blood with the organic sensibility of the capillary vessels."¶

Now, too, we are able to see more clearly wherein and to what extent the blood is faulty. Passing over the more minute quantitative analysis of blood in purpura hemorrhagica, we find a decided augmentation in its watery portions, and decrease of the blood-corpuscles, besides the presence of *bile,* which Simon deems of great importance from its power of dissolving the blood-corpuscles.**

Richter†† relates a case of *petechiæ sine febre,* wherein the petechiæ "were purely of a bilious nature."

That jaundice is a common accompaniment of purpura hemorrhagica, I am inclined to believe, partly from personal observation, but mostly from the concurring opinions of numerous other observers. This existence of bile in the

* Dr. Ritchie, Braithwaite, part xvi. p. 51.
† Drs. Ritchie and Goldie.
§ Elementa Medicinæ.
¶ Eberle, Practice of Medicine.
†† Medical and Surgical Observations.
‡ Aphorisms of Hippocrates.
‖ Zoonomia.
** Chemistry of Man.

blood, with or without its colouring principle, coupled with the common occurrence of jaundice in this affection, either as cause or effect, would seem to suggest a most interesting subject of inquiry for future observation.

Of the hæmoptysis in this case, it seems to me probable, from the clear, bright red, arterial nature of the blood, the symptoms of suffocation which followed, and the appearance of the lungs upon necropsy, that the pulmonary mucous membrane was the true source.

Was the disease itself hereditary, or was that innate deficiency of vital energy its exciting cause? Certainly not the former; and though the latter might, in a considerable degree, have predisposed to it, still I suppose this hemorrhagic diathesis depended ultimately for its cause upon *hepatic derangement*, which operated directly in producing the spanæmia, and indirectly influenced the condition of the solids.*

Should this view seem to relapse nearly two thousand years into the *mechanical* considerations of the *methodic sect*, nevertheless it will be considered nearer the true pathology than anything exclusively of the fluids or of the solids, of "spasmodic action of the capillaries," or "paralysis of the venous system."

Had life been prolonged in this case, it is not improbable that a fatal hemorrhage would have occurred at the umbilicus, after sloughing of the cord.

Keene, New Hampshire, *January*, 1851.

Art. X.—*On a new form of Phosphate of Lime in Crystals; as it occurs in Putrefying Urine.* By Jno. C. Dalton, Jr., M. D. (Read before the Boston Society for Medical Observation, Feb. 17, 1851.) [With seven wood-cuts.]

If healthy urine be allowed to remain for some days in a cylindrical glass vessel, lightly covered, to prevent the access of dust, &c., its gradual decomposition gives rise to various crystalline formations. After the first twenty-four hours, there is usually to be seen, at the bottom of the vessel, a very light cottony cloud, composed apparently of mucus from the urinary passages, but not presenting any very definite forms under the microscope, with the exception of octohedral crystals of oxalate of lime, which it frequently contains, in considerable abundance.

At the same time, or a little later, a very thin pellicle is often visible on the surface of the urine, composed of minute crystals of oxalate of lime, less perfectly formed, for the most part, than those at the bottom, but mingled

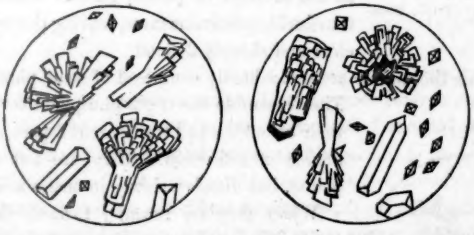
* I regret not having made a chemical and microscopical analysis of the fluids in this case.

usually with a few of the ordinary size and shape. This pellicle is often so delicate that it is only to be seen by allowing the light to fall obliquely upon it, when a tremulous glittering surface becomes visible, which frequently exhibits a play of faint prismatic colours. It is sometimes arranged in wavy lines and streaks, so as to give a marbled appearance to the surface of the fluid.

After a few days, this pellicle sometimes begins to be sprinkled with minute, whitish, opaque spots. These spots are caused by collections of small radiating crystals, which at first are easily broken up and separated from each other in removing them from the surface of the urine; so that, at the time when their formation has first commenced, they are usually obtained only as detached bodies, or in the form of incomplete groups. At this time, the crystals are quite colourless and transparent, and have the shape of a slender scalene triangle, with the long sides slightly curved. They already show a disposition to form themselves into circular groups, by applying their apices to each other, thus assuming the shape of a radiated bundle or rosette. They are often, also, laid one upon another, with their flat surfaces opposed, like piles of boards. In the course of a few days longer, the crystals increase in size and thickness, still retaining their colourless aspect, and become grouped together in complete rosettes, and even in globular masses; so that, by raising and lowering the stage of the microscope, we may bring into view either the upright crystals, presenting their *butt ends* towards the observer, or those which are arranged horizontally in a circular form.

Fig. 1. (6th day.)

Fig. 2. (15th day.) Fig. 3.



Radiated bundles, together with octohedra of Oxalate of Lime and prisms of Triple Phosphate.

The period at which these crystals first make their appearance varies somewhat with the temperature of the room, and various other circumstances which hasten or retard the putrefactive changes in the urine. Usually, however, their formation commences between the third and sixth day, when the urine is just beginning to lose its acidity, but has not yet become decidedly alkaline.

In the majority of cases, the urine has been neutral in reaction at the time of their appearance, but they are not unfrequently to be seen when it is still distinctly acid.

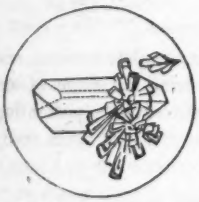
When the alkaline reaction is fairly established, their formation ceases, and in place of them, there is an abundant production of the ordinary prismatic crystals of the triple phosphate; so that, after the first six days, the two forms are usually to be seen together, the latter predominating more and more in proportion to the length of time which has elapsed, and the rapidity with which putrefaction advances.

Fig. 4. (12th day.)

The radiated form is not the only one in which the crystals present themselves, but they are sometimes arranged also in a parallel position, so as to form a thick, solid mass, which even bears some resemblance occasionally to a prismatic figure, the ends and edges of the crystals which compose it remaining visible on its sides.

The precise chemical composition of these radiated crystalline bundles is not very easily ascertained, owing to the difficulty of obtaining them in any considerable quantity for manipulation. Indeed, all chemical operations on them must be conducted with the aid of the microscope; and they are usually associated, also, with several other crystalline forms, such as oxalate of lime and prisms of triple phosphate, from which it is not easy to separate them completely. They are also often surrounded, and partially obscured, by clusters of dark molecules, probably of animal matter; which, on the addition of potass, become dissolved into a translucid, gelatinous mass, leaving the crystals quite clear and sharply defined.

Fig. 5. (9th day.)



Radiated bundles, mixed with large prisms of Triple Phosphate.

The crystals themselves are undoubtedly composed of some phosphatic salt. They resemble the triple phosphate very closely in their colourless and transparent aspect, and in their degree of refraction. They are not affected by potass, but dissolve slowly in acetic acid.

Fig. 6.

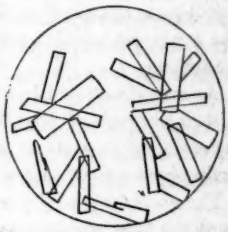
Appearance of the Radiated Bundles, while undergoing solution in Acetic Acid.

When they are recently formed, this solution takes place with comparative readiness, but as they increase in size they seem to become denser, and to resist, for a longer time, the action of the solvent. At this period, they are associated, as already stated, with the prisms of the triple phosphate; and the difference in solubility between the two is then very evident, the latter disappearing rapidly,

after the application of the acid, while the former remains, for a considerable time, untouched; so that it is possible, by this means, entirely to dissolve out the prismatic crystals, and yet wash away the acid in time to leave the radiated bundles nearly, or quite perfect.

In this regard, they resemble completely some crystals of phosphate of lime artificially prepared by Dr. Jno. Bacon, of this city, by adding chloride of calcium to urine, and allowing the mixture to stand for some days. These artificial crystals, as I am informed by Dr. B., dissolve with some difficulty in acetic acid, and can be separated from the prisms of triple phosphate, with which they are associated, by the same process as that described above, viz., by dissolving the latter, and then immediately washing away the acid with pure water. They are also flat and ribbon-like in figure, and resemble the other crystals in their general aspect and their refractive power; only they are not pointed at one extremity, and show no disposition to assume the form of radiated clusters. (Fig. 7.) It is only some days later that radiated figures are produced, composed of acicular crystals of the same salt.

Fig. 7.



Artificial Crystals of Phosphate of Lime (from one of Dr. Bacon's specimens).

Dr. Bird also states (on "Urinary Deposits," Amer. edition, p. 130) that the phosphate of lime is not quite so soluble in dilute acids as the triple phosphate, and that, "when a mixed deposit of the calcareous and magnesian phosphates exists, the phosphate of lime is left undissolved, when digested in very dilute acetic acid."

ART. XI.—*A case of Double Ovarian Dropsy—both Ovaries successfully removed by the large Peritoneal Section.* By E. R. PEASLEE, A. M., M. D., Prof. of Surgery in the Medical School of Maine.

MISS SARAH N. G——, of West Claremont, N. H., æt. 25, black hair and eyes, delicate development, but not fragile—a young lady of intellect and refinement—first consulted me on the 6th Sept. 1850. She had first discovered a tumour extending half way from the symphysis pubis to the umbilicus, and precisely on the middle line, in June, 1849, or about fifteen months ago. It was then, perhaps, three inches in diameter, very movable, and apparently of a spherical figure. Its size became doubled, she thinks, within six months afterwards, and has been still more rapidly increasing since.

It has never been painful at all, nor tender on pressure, up to the present time. A disagreeable sensation of *tension* alone has been felt, and this only for the last few months. She has never, at any former period, had any pain in either iliac or inguinal region; nor any other symptom of inflammation, or even irritation, of either ovary. Menstruation has been regular to the present time; and there has never been any leucorrhœal discharge. Nor has there been any derangement of the stomach or bowels till since she commenced the use of drastic cathartics; and her present emaciation, weakness, pallor, and loss of appetite, she attributes mainly to them. During the last few months, she has, in addition to hydragogue cathartics, made trial of diuretics, and iodine ointment—but with no perceptible benefit. Her appetite is still poor, though all medication has been suspended for two or three weeks. She is not yet troubled with either dyspnœa or nausea from the pressure of the tumour.

As several distinguished physicians had been either doubtful or incorrect in their diagnosis of Miss G.'s case, I shall be the more explicit in regard to the examination made to establish it—the general condition of the patient having been already indicated.

The *abdomen* is very prominent; its circumference being thirty-nine inches above the hips, and forty-one inches around and across them. The enlargement is regular, except that the left side, from the spine to the linea alba, measures three-quarters of an inch more than the right. It rises to within two inches of the ensiform cartilage, and fluctuation is detectable in every part of it. The abdominal walls are very tense, and not yet at all pendulous. The skin even is so tense as not to allow of any motion. No tympanitic sound is elicited by percussion, except over the epigastrium; and whether the patient is sitting, standing, or lying in varied positions, no apparent effect is produced on the fluctuation, the sound on percussion, nor the position of the enlargement itself.

A tumour is felt, *per vaginam*, in the region of the left ovary, around which (and also obscurely *within* it), fluctuation is apparent on percussing the abdomen externally; though, as a whole, it appears lobulated and quite resistant. The finger can reach only a portion of it, perhaps as large as a hen's egg.

This tumour is also felt *per rectum*, and most extensively to the left of the uterus; the latter being slightly retroverted, but not inclined to either side. This aspect of the tumour seemed entirely solid, and not manifesting the least fluctuation. It can be slightly elevated on the tip of the finger; but whether from the yielding of the attachments, or of its walls, I cannot determine.

Diagnosis.—An ovarian tumour, probably originating from the left side; the fluid being contained in a large sac constituting the greater part of the tumour; and the more solid portion, felt per vaginam, being a mass of smaller sacs connected with the latter, and containing each so small a quantity of fluid as to admit of only an obscure fluctuation.

Advised that the patient be tapped without delay, with a view to ascertain whether the fluid was principally contained in a single large sac, as appeared to be the case—how large the solid part of the tumour might be; whether the diseased mass had become adherent to the surrounding parts and organs; and all other facts bearing on the question of removal of the mass by the large peritoneal section—this operation having been previously suggested and explained to the patient before she consulted me.

Sept. 11th (five days afterwards), Dr. E. E. Phelps, of Windsor, Vt., tapped the patient, and obtained 26 lbs. of a thick fluid of a brown colour (specific gravity 1026), with flakes floating in it so large as to obstruct a canula of the common size. An apparently solid tumour at once became prominent on the left side of the abdomen, seven and a half inches in its vertical dimensions, and four inches in its transverse at its upper part by five inches at the lower. It seemed perfectly movable, and non-adherent to any contiguous part.

The patient was at once relieved. She came down stairs the morning after. Her appetite at once returned; the kidneys began immediately to act copiously, and so continued for a week. Still, Dr. Phelps found, on the 15th, that the sac was rapidly filling again.

I again saw the patient on the 17th (six days after the tapping), with Dr. S. G. Jarvis, her attending physician, and Dr. Phelps. She had sat up all day as well as yesterday, and appeared much better in countenance than when I saw her on the 6th; but a large quantity of fluid had accumulated since the 11th.

Examination.—Abdomen quite lax, and fluctuation everywhere apparent, except in the left lumbar region, and thence forwards to a line from the seventh left costal cartilage to the anterior superior spinous process of the ilium. No tympanitic sound on percussion, except over the upper part of the ascending and right half of the transverse colon; though, while the patient sits erect, it extends across the epigastrium. Circumference to-day above the hips, while erect, is thirty-three inches; around the hips, thirty-five inches. Distance across from one anterior superior spinous process to the other, thirteen and a half inches.

The solid tumour, so prominent immediately after the tapping, is far less so now. It is found to extend from the level of the left crista ilii to the cartilage of the seventh rib; is not movable to any considerable extent; is not tender nor even sensitive to pressure, and presents a distinct elevation on its anterior face half as large as a hen's egg, and about four inches from the top; probably a distinct sac full of fluid. Its position is nearly vertical, and it can be traced downwards about seven inches. Its other dimensions appear the same as those given by Dr. Phelps on the 11th; but the accumulation of fluid since then renders it more difficult to determine its size with accuracy.

The skin of the abdomen is now movable in every part, and there is no tenderness on pressure anywhere, except at two points, each about one and a

half inches square, viz., just below the cartilage of the eighth rib on the right side, and at the anterior extremity of the tenth rib on the left side. This did not appear to be peritoneal tenderness. She has had no pain since the tapping; no unpleasant sensation indeed, except a tired feeling of the abdominal muscles, which, during the past year, she has oftentimes experienced. I, therefore, discovered no proofs of adhesion of either the solid portion or the sac, now perhaps half filled with fluid again. It was, however, *possible* that the latter may be extensively adherent, either to the omentum majus, or the peritoneum of the abdominal walls, or both. The mobility of the solid portion, after tapping, satisfied Dr. Phelps, at the time, that this part of the diseased mass could not be adherent. And no sign of peritoneal inflammation has hitherto existed to lead to the suspicion of adhesion from that cause, either prior, or subsequent, to the tapping. And previous examinations even, whether external or internal, have never produced pain at the time or afterwards.

Per vaginam, the finger feels to-day merely a tenseness in the region of the left ovary, but nothing of the solid tumour detected on the first examination, eleven days ago. Nor can any fluctuation be detected in this direction from the vagina to-day.

Per rectum, also, I can detect only the unyielding band in the position of the left ovary; no fluctuation or tumour. The uterus is a little retroverted, but lies on the middle line. It is not at all tender. It can be displaced a little to the left, but not towards the right side.

The uterine sound entered the uterus two and a quarter inches, following the middle line also; but the uterus could not be moved perceptibly upon it. It produced no pain.

On passing a sound into the bladder, it also followed the normal direction, and could be passed freely in all directions within that organ.

All the changes which could be made in the position of the enlargement produced no appreciable effect upon the position either of the uterus or the bladder, while they were respectively sounded.

All the preceding facts were thought to be consistent with the diagnosis given on the 6th; the evacuation of the fluid by paracentesis having allowed the solid portion to rise higher in and above the pelvis, into the lower part of which it had before been pressed, by the greater weight in the large sac attached to it—this elevation of the tumour also producing the tense state of the left broad ligament just alluded to.

I therefore told Miss G. that, so far as positive signs were concerned, her case appeared at least as favourable for the operation of extirpation by the large section, as several of the cases reported in which it had been performed; that I did not assume that it was ever justifiable, but, if so, it would be so in the present case, so far as I could discover any indications to the contrary; that I did not, however, *advise* the operation, since it might prove fatal, even though the disease was successfully removed; and on the other hand this might, on

opening the abdomen, be found impossible, in which case she could, of course, derive no advantage from the operation, and might even lose her life in consequence of it.

She replied she had resolved to have the operation performed, if there was any possibility of its succeeding; certainly, if there was one chance in eight for her to live through and recover from it, independently of the chance of removing the disease; that she well knew all the risk, and wished to incur it. She had before said she had no desire to live as at present, and had calmly contemplated all the consequences of her decision.

At her solicitation, with the request of Drs. Phelps and Jarvis, I therefore engaged to perform the operation on the Saturday following. She seemed much relieved by my decision, and replied, "I shall long to have the day arrive."

Thursday evening, Sept. 19th.—To take a free dose of castor oil, and only fluid food afterwards. To keep quiet also, especially on Saturday—the operation to be performed at 3½ P. M. of that day.

Saturday, 21st.—The fluid has so far accumulated, during the past four days, that it is now difficult to find the solid part of the diseased mass at all. The tenderness at the two points specified on the 17th is now somewhat increased, and I discover a distinct "friction feeling" not before existing over them—mentioned at the time as a proof that adhesions of the mass had formed since my last examination.

Operation, 3½ P. M.—The patient was placed upon a table, with the feet towards a window, and resting on a chair, the head and shoulders being elevated upon pillows placed upon an inclined plane, and supported by an assistant. She had previously evacuated the bladder; the pubes had been shaven so far as would be implicated by the incision; a sheet applied around the pelvis, and a line drawn with a lead pencil, to indicate the precise position of the incision, from a point two inches above the umbilicus, and one-half inch to the left of the linea alba, down to the symphysis pubis. The temperature of the room had been raised to 80° (Fahr.), and was to be kept at this point for the first few days—the air being also kept damp during the operation by the constant evaporation of water.

Drs. Jarvis and Tolles, of Claremont; Drs. Phelps and Clark, of Windsor; Dr. Comings, of Plainfield, and Messrs. D. S. Conant and A. T. Fitch (two of my medical pupils) assisted me.

Anæsthesia was induced, in about six minutes, by a mixture of pure sulph. ether (twelve parts) and chloroform (one part), and the operation was commenced at ten minutes before four o'clock.

On dividing the skin and superficial fascia upon the line marked as above—it being nine inches in length—I found, contrary to my expectation, that the latter, together with the adipose deposit in it, was at least one and a quarter inch thick, for an extent of four inches below the umbilicus; which caused no little subsequent difficulty in closing the wound. Next, the abdominal apo-

neurosis was cautiously divided for half an inch, at a point three inches below the umbilicus, with the intention of falling directly upon the linea alba, and between the recti muscles. But the deviation of the linea alba to the left side being still greater than I had calculated, my incision was found to have penetrated the sheath of one of the recti. By the introduction of a probe, it was at once ascertained to be the *right* rectus which I had reached, and just at its inner edge; and thus the precise position of the linea alba was indicated.

After all external hemorrhage had ceased (not over ℥j), I carefully divided the linea alba for about six inches. In doing this, a small artery in the edge of the left rectus was severed; but the contact of the air at once stopped the bleeding. I now expected to see the fascia transversalis and peritoneum; since, in this operation, they are generally found very much thickened. But in this I was disappointed. On dividing, with the greatest care, the very thin aponeurosis, I brought into view a dense white membrane, and of too smooth an aspect to be the external surface either of the fascia transversalis or the peritoneum; and which I concluded, after a brief examination, must be the sac itself. But, as some doubt was expressed as to the correctness of this opinion, I endeavoured by careful dissection to detach from it either the fascia or the peritoneum, until it became certain that the membrane in sight was the sac itself. In settling this question, however, at least ten minutes were lost. Moreover, a vein in the wall of the sac was divided, which afforded almost all of the blood lost during the operation, and which amounted in all to not more than ℥x. The hemorrhage was arrested by applying a ligature to the vein, till the sac should be removed. In detaching the vein for this purpose, the sac was divided completely through, and a small quantity of the characteristic contents escaped.

And at this conjuncture, still another cause of delay occurred. The patient, hitherto perfectly quiescent, now began to make violent efforts to vomit; and supposing the anæsthetic might possibly produce this effect, it was at once withdrawn, and not afterwards administered during the operation. Still the retching continued; and during this time I could only sustain the abdomen with both hands, and keep the internal organs from protruding as effectually as I might. About fifteen minutes were lost in this way. During these violent efforts, the incision gaped so as to assume an elliptical form; the sac filling up the ellipse, except when a loop of intestine or a portion of omentum made its appearance. These were, however, always replaced with ease, during all stages of the operation.

When the retching had ceased, I introduced the hand to ascertain if the sac were anywhere adherent—intending, if it were so extensively attached as to render it improper to remove it, to adopt the method first suggested, I think, by Prof. Récamier, viz., to evacuate the contents through a small opening, and attempt to produce adhesion of its anterior surface to the abdo-

minal walls. But to my great satisfaction, I found the mass was nowhere adherent except at the points mentioned before I commenced the operation, over which the "friction feeling" was so distinct. Here the adhesions covered, on each side, a surface about two inches square.

The contents of the sac were next evacuated, through a large incision, into a bucket, and amounted to twenty-two pounds of fluid, like that obtained by Dr. Phelps ten days before. The incision through the abdominal aponeurosis was now enlarged to correspond with that in the skin; and the sac being now collapsed, the adhesions were easily broken up by the fingers; and before removing the hand, I left every part free down to the pedicle, which was very broad and firm, and attached to the left side of the uterus, as was expected.

The more solid part of the mass is now seen to be an aggregation of smaller sacs of various sizes, from that of a pea upwards. The two largest were punctured with a trocar, and at least a pound of fluid escaped. The whole mass was then lifted out of the abdominal cavity, and held by assistants, while I passed a double ligature of six threads of saddler's silk, "not twisted, but well waxed," as Dr. Atlee advises; and cutting out the needle, tied each portion around one-half of the pedicle. The latter was six inches wide and half an inch thick; except one inch in the middle, where the two layers of peritoneum in the broad ligament appeared in their natural relation. On the outer side of this thin portion were an artery (nearly as large as the radial) and a vein, and a quantity of areolar tissue; on the inside, the Fallopian tube, and a still larger artery and vein, with a quantity of areolar tissue supporting them. The pedicle was divided obliquely upwards, and to both the *right and left*, from a point a quarter of an inch above where the ligature passed through, to within a quarter of an inch of the diseased mass.

On making a careful examination of all the parts and organs brought into view, preparatory to closing the incision, I discovered that a sac of the size of a pullet's egg was developed in the *right* ovary also; and that the whole organ was otherwise diseased. Accordingly, a double ligature (of two threads only) was passed through the broad ligament, and the remaining ovary was likewise removed.

The bladder was completely collapsed; the uterus perfectly smooth and healthy. The intestines were also in every part collapsed, and, therefore, now gave not the least trouble from protrusion. The parts exposed to the action of the air assumed a somewhat dusky hue; especially the uterus and bladder, which were of necessity longest exposed. The omentum was now carefully replaced; the operation, inclusive of the delays above specified, having occupied fifty-five minutes.

Closing the Incision.—The edges were accurately brought together, and retained thus, by five long and stout needles, equidistant from each other, and consequently one inch and a half apart, and which punctured all the

layers but the peritoneum. The insertion of the needles was a difficult matter, for reasons hereafter to be specified. The four ligatures were brought out through the incision at the nearest point, this being between the lowest two needles. No tent of any kind was used. The skin would not meet for some inches in the middle portion of the incision, on account of the pressure of the parts underneath from the needles; and was drawn together by points of suture an inch apart, penetrating it alone. Ligatures were applied around the needles in the usual way.

The incision, being thus brought together, formed a prominent ridge of the same length, and four inches wide; there being on each side of it a deep depression, from the empty state of the alimentary canal, and the collapsed state of the hitherto distended abdominal walls. Strips of adhesive plaster were applied across this between the needles, and a compress dipped in warm water, over which a dry one and a piece of oiled silk were placed, completed the dressing; and the patient was placed in bed at twenty-five minutes before six.

She is now (fifteen minutes before six) much exhausted, having suffered much from the introduction of the needles, as well as from the operation. Is deadly pale, and still very sick at the stomach. Pulse 70, very weak; respiration 18. Warm blankets are applied, and a little brandy and water are given, and a few drops of aq. ammoniæ, at intervals. On inquiring whether she still hoped to rally, and do well, she replied, "I have not a doubt of it, sir."

She was now attended constantly, for the following nine days, by three of my medical pupils, in turn: viz., Messrs. Conant, Fitch, and T. W. Wadsworth, who, during that time, kept an hourly record of her condition. From this, I extract the account which follows below. The temperature of the room is to be kept at 78° to 80°; she is to take the aqua ammoniæ, &c., till reaction is established; and forty drops of McMunn's elixir of opium, to be then given. Nothing but bread-water for diet; acidulated drinks; not to speak aloud, nor to move without assistance; catheterism every six hours; and the wet compress to be renewed every three hours, or before it becomes dry.

8 *o'clock* P. M. (two hours after operation). Pulse 112, soft. (N. B. Her natural pulse is about 90.) Respiration 21; countenance pale and cold. A little chilly at intervals. Is very faint, a common thing in her best health, when excited. Nausea still continues; has not vomited.

10 *o'clock.* Has been gradually rallying the past two hours. At 9, took a little wine-whey. Pulse now 112, fuller; respiration 26. Has slept a few minutes.

11 *o'clock.* Reaction is now complete. Pulse 112, and full; respiration 24. Sickness and faintness nearly gone. Drew ℥iij of clear, concentrated urine. She has "not the least doubt" she will recover. The sickness and

faintness recurred to some extent during the night; and her uneasy sensations were relieved by changing her position about once an hour. She slept very quietly about three hours in all. Vomited once; ℥iv healthy urine drawn at 5 A. M.

Sunday, 6 A. M. Patient wakes up refreshed, saying she has "rested better than on some nights before the operation." Pulse 120, full; respiration 24. (At 5 in the afternoon of to-day, the pulse fell to 105.) Dr. Jarvis took charge of the patient at 10 A. M., and I did not again see her until Tuesday P. M. She has no marked thirst nor heat of surface to-day. Less frequent changes of position are necessary. Occasional faintness, and slight pain in the course of the incision. Dr. Jarvis drew off ℥iv urine at noon, and ℥iv more at 7 in the evening.

Monday, 6 A. M. Was somewhat cool at 3 this morning, but no chill. Urine ℥iij, at 2 A. M. Has had a comfortable night; but has slept only between two and three hours. Pulse now 112; respiration 22. During the day, the former ranged between 109 and 114. At 9 A. M. ℥viii of urine; ℥vi more at 5 P. M.; and ℥viii also at midnight. Tongue is moist, with a very thin white coat. Had a severe deep-seated pain in right iliac region at 9 A. M.; at 12, a similar pain near the umbilicus; both relieved by change of position. Has a slight dull headache most of the day; and darting abdominal pains often recur. But she slept an hour before noon; has no thirst; no swelling or tenderness of abdomen; skin is moist and natural; and, on the whole, has had not an uncomfortable day.

Tuesday, 6 A. M. Wakes as from a good night's rest, having slept three and a half hours in all. The pulse fell to 93 at 5 this morning. Is now 104, rather weak. Urine ℥viii drawn at 8 A. M. and at 2 P. M.; also at 10 P. M. Less pain in the bowels than yesterday. Patient slept half an hour at noon; feels stronger; says she "could sit up, if allowed to do so." I saw her this afternoon—seventy hours after the operation. Pulse 112; resp. 23. It is a very warm day, and patient complains of the heat. Dressed the wound anew. Skin already united wherever edges are in perfect contact. Here and there a drop of pus around the sutures. No tenderness or swelling of abdomen. The catamenia returned this evening.* She has had a very comfortable day. Tongue slightly coated, and breath acid. To take an enema this evening.

Wednesday morning. Patient slept quietly from four and a half to five hours last night. Pulse fell to 86 at 4 A. M.; is now (9 A. M.) 96, full. Urine ℥vii at 6 this morning. At 11½ A. M. (eighty-five hours after the operation), she passed ℥viii of urine *without aid*, for the first time; and needed no instrumental assistance afterwards—this secretion remaining normal during her recovery. Patient has had no chill yet; "feels better than yesterday;" countenance cheerful and animated, as though nothing unusual

* And continued three days.

had happened. No effect from the enema. Castor oil ʒij to be given at 2 A. M.

Thursday morning. Patient thinks she slept about five hours last night. "Feels stronger." Pulse 86; respiration 20. Changed clothing and bed-clothes at 10 A. M., for first time since operation.

I saw the patient at 3 o'clock P. M. Pulse 92; dressed the incision, and removed two of the five needles. The abdomen is now less concave on the sides of the ridge produced by the needles. Scarcely any suppuration. No tenderness or pain of abdomen.

Friday morning. Patient did not sleep at all last night, since the bowels have not been relieved by the oil, and a smarting where the needles were removed was felt most of the night. Pulse 94, at 9 A. M.; ranged from 83 to 104 during the day. Head feels pressed still. Skin hotter to-day; less so after an hour's sleep from 2 P. M.

Saturday morning (one week after operation). Patient took sixty drops of McMunn's elixir at two doses last night, and slept about three hours in all. Pulse 84; respiration 22, at 9 A. M. to-day; having just waked from half an hour's sleep.

I saw the patient at 3 P. M. to-day; changed all the dressings, and removed the three remaining needles. Skin firmly united, except at three points where the apposition had not been perfect. Very little suppuration. Appetite strong. A slight flatulent distension on right side of abdomen. Tongue slightly yellow. To take ʒij more of castor oil this evening, and thirty drops of McMunn's elixir.

The record was hereafter made only once in three hours.

Sunday.—Patient slept about four hours in all last night. Is stronger than yesterday, and wishes to begin to help herself. Pulse at 3 P. M. is 90; resp. 22. A large enema secured the free operation of the oil in the evening, and she slept all night "as well as she ever did."

Monday, 9 A. M.—Pulse 88; resp. 18. Perfectly comfortable in all respects.

Messrs. Conant, Fitch, and Wadsworth discontinued their attendance from this time.

Tuesday, 2½ P. M.—I found the patient very comfortable. Thinks there are "not ten happier ladies in the U. S.; and is not sure she would exchange conditions with any one of them even." Has a very slight headache. To take an enema to-night, and oil to-morrow if required.

Pulse from 90 to 100 during last twenty-four hours. Tongue clean; skin natural; lips bright red; appetite excellent; no tenderness or unpleasant feeling in abdomen. I change all the dressings. Wound perfectly healed in every part, except where the four ligatures come out. Only a drop or two of pus around them.

On *Wednesday* she had some headache, the bowels not being relieved, and

she having slept but little on Tuesday night. Another dose of oil on Wednesday evening produced a free evacuation on Thursday, and she was very comfortable for forty-eight hours afterwards.

On *Thursday morning*, she sat up in bed for the first time.

Saturday, Oct. 5th, two weeks after the operation. I saw the patient at 9½ A. M.—Pulse 85 to 94, since my last visit; is now soft and weak. Has sometimes felt a tenderness at the points where the tumour was adherent; less of this to-day. Tongue a little coated; less appetite. To take a pill at night of pil. hydrarg. and extract. hyoscyami. Only a drop of pus in contact with the ligatures. The small ones yielded a little to gentle traction.

To take rich broth, beef tea, or any simple nutriment she may prefer. May be helped into a chair, when all tenderness of the abdomen has subsided.

Sunday.—Sat up in her chair half an hour for the first time, being the fifteenth day after the operation.

Saturday, 12th.—A letter from her sister of this date says, "My sister has been very comfortable since the last report, except during the last forty-eight hours, during which time she has at intervals had considerable pain in the right iliac region; but no tenderness on pressure, except at a point corresponding to the position of the ligatures on that side. She has sat up from one-quarter hour to an hour, as she felt inclined, every day this week. Her appetite is very good."

This pain continued four days (or to the 14th), but affected neither the pulse, appetite, nor tongue, and never afterwards recurred.

Wednesday, 16th (twenty-five days after operation). Saw the patient this afternoon. She has sat up from one to one and a half hour daily of late. Has gained flesh and strength since last visit. Has stood upon her feet, but not yet walked. Has a better appetite than usual when in her best health. Tongue clean; abdomen is now convex, and well formed. Bowels are moved once in forty-eight hours by a small dose of oil. Only three short straps were left across the incision, it now being firm enough to rely upon. A small compress is still retained to protect the ligatures. I apply gentle traction to them separately. They seem to lift the abdominal walls *alone*, but do not come out nor produce any pain—to be pulled upon very gently every day. Patient not to walk before the end of this week (four weeks in all), and then with a staff to incline the trunk forwards and relax the abdominal muscles.

30th (forty days after the operation). A report of this date says, "My sister is very well; she says she was 'never better in her life.' Has taken no medicine, nor felt any discomfort for the last fortnight. Dr. Jarvis says her countenance is better than for a year before, and he thinks she has gained ten pounds of flesh. She has not been out yet, but sleeps up stairs, and has resumed all her former habits. None of the ligatures have yet come away."

Jan. 6th, 1851.—A letter of this date from the patient herself, in answer to several inquiries by myself, gives a full account of her state at that time. And, since commencing this report, another letter has been received, stating that her health continues "precisely as then."

"My health (thanks to yourself) is perfectly restored. I have not had the slightest drawback since your last visit, except an attack, of which, at your request, I will give an account.

"The first ligature came away on the 7th of November, and the second on the 16th—both of them from the left side. The third came away on the morning of Nov. 19th, with perfect ease, and, unlike the others, brought the knot (loop), with it.* Half an hour afterwards, I was seized with a severe pain over the surface of the abdomen, and which, at the end of an hour, seemed to settle in the right iliac region, where the ligature was detached. Dr. Jarvis was called in at noon, and applied fomentations to the abdomen, and gave a dose of castor oil, and frequent doses of McMunn's elixir. In the evening leeches also were applied, the pulse then being 121. The pain occurred at intervals, and continued severe for twenty-four hours. In four or five days, I was quite well again. The day before, I had stepped into the garden to take up some bulbs, but was well guarded from exposure, and know of no cause for the attack. The aperture around the ligatures closed up at once. The cicatrix of the incision is now precisely five inches in length. The catamenia not restored. No disagreeable sensations in the parts connected with the tumour. I have danced once, and felt no inconvenience therefrom."

Description of the tumours removed.—1st. The large mass first removed now resembles, as a whole, in form and relation of parts (it being collapsed), the fœtal membranes enclosing the placenta—the more solid part corresponding to the latter. Its vertical diameter is 12 inches, its transverse 9½ inches; its original form being ovoid. The enclosed portion is oval and thin; being 6½ by 4½ inches in diameter, and 2½ inches thick.

The external surface of the *sac* is perfectly smooth and nacreous in appearance, except two inches square on the right side and a little less on the left (precisely where the "friction feeling" was perceived)—these surfaces being covered by the recently formed bands I had ruptured in breaking up the adhesions of the sac. An epithelium, but no distinct serous membrane, can be detected by one of Chevallier's largest microscopes. The Fallopian tube, $\frac{3}{16}$ inch in diameter, extends to the top of the solid tumour, accompanied by a large vein, and an artery of the size of a wheat straw. The protuberance on the solid portion, felt through the abdominal walls, was a distinct sac, as was supposed; its fluid having a specific gravity of 1023, and containing, like that of the large sac, a large quantity of albumen, and scales of cholesterine. The sac itself is $\frac{1}{16}$ inch thick.

* She does not account for the fourth ligature at all.

Its *internal* surface presents several large veins; and is covered quite extensively in patches by recently exuded plasma. In general appearance, it resembles a mucous membrane.

The weight of the whole mass is 2 lbs. 3 oz. avoirdupois.

2d. The *right* ovarian tumour is one and a half inch long by one and a fourth inch in diameter, consisting of a sac containing ʒiv of a reddish fluid; and the proper stroma of the organ, hypertrophied and indurated, and presenting a lobulated and warty appearance. Its whole weight is ʒx.

The preceding case has suggested the following remarks:—

I. So far as the writer is aware, Miss G——'s case is *unique*, as far as the successful removal of both ovaries at the same time by the large peritoneal section is concerned. It is also scarcely less singular, for the very slight disturbance of any kind from the operation. The *pulse* never rose above 120; never above 115 after the first twenty-four hours had elapsed, except for a few minutes on Sunday night. From Monday morning to Tuesday morning, it ranged between 93 and 114; Tuesday to Wednesday morning, between 86 and 112; Wednesday to *Friday* morning, between 88 and 104; Friday to Saturday morning, 83 and 100. It never rose subsequently above 97, and averaged 90—about her natural pulse. The *respiration* was 26 for half an hour when reaction was first established; and uniformly 23 or 24 during the first three days. It then continued at 22, till the pulse fell to 90; and then became 20. The *reaction* also was perfect in less than five hours, and was never excessive. Indeed, the patient may almost be said to have recovered without a single bad symptom; at least without any severe symptoms peculiar to such an operation; or which might not have occurred to one of her delicacy of constitution, from even a slight cause. Hence the *medicinal* part of the after-treatment was decidedly expectant. The suppuration could not have amounted to more than ʒiss in all, during recovery.

II. The almost unfailing aid, in the diagnosis of ovarian diseases, which is afforded by the present advanced state of pathologico-anatomical and surgical science, as compared with the obscurity resting over this subject till very recently, is worthy of remark. It is, however, impossible to form any rational conclusion as to the adhesions or non-adhesions of a sac thus filling the abdomen, without previously evacuating it by tapping. Even then, adhesions may exist without being detected. The "friction-feeling" is more distinctive than any other sign short of evident immobility of the sac; and was, I think, detected in this case on the first examination after (and in less than thirty-six hours after) the adhesions had formed.

The reason assigned for the absence, on the second examination, of the solid tumour felt per vaginam et per rectum eleven days before, proved to be correct. The fluctuation perceived from these passages at the first examination was produced by the fluid in the large sac, which, being less distended at the second, did not fall so low as to be reached. Thus the inferences from the

positive signs at first, were rightly regarded as being confirmed by their absence afterwards—the circumstances having changed.

III. The temperature and hygrometric tate of the air in the room at the time of the operation are very important matters. Certainly, the peritoneal surface is *more nearly* in its natural condition when exposed to a *warm and damp* atmosphere, than if the latter be cool or dry, or both. A still higher temperature than 80° would probably be better for the serous membrane; but it could not long be tolerated by the lungs either of the patient or the operator. It was observed that the surface longest exposed became somewhat livid from incipient congestion; and, had even a less protracted exposure to a dry or a cool atmosphere occurred, I doubt not this effect would have been still more marked, and a decided congestion, which is but a single step from inflammation—from peritonitis—might have occurred. Moreover, a sudden change of temperature, even though a slight one, *after* the operation, and whether general or local, is replete with danger. Hence the temperature was kept at 78° to 80°, till all danger of inflammation had disappeared; and the warm water dressing was kept constantly upon the abdomen, as long as any dressing was needed.

That the alimentary canal be also empty and collapsed at the time of the operation, is an important consideration; since thus protrusions are avoided, or easily reduced if they occur. Hence the propriety of a dose of oil thirty-six hours before the operation, and fluid nutriment afterwards.

IV. Several difficulties I have not seen adverted to, in reports of this operation, occurred. 1st. The skin, being very tense, retracted about three inches when divided, and also drew the next layer (one and a quarter inch thick, as before stated), as it was divided, down to an almost level surface; and thus rendered it impossible to keep the precise position of the middle line in the eye, through the whole length of the incision—nine inches. 2d. The fascia transversalis and parietal peritoneum were so atrophied by pressure as not to be recognized as distinct layers either during or after the operation, instead of being thickened as usual. 3d. Violent efforts to vomit, *i. e.*, spasmodic action of the abdominal muscles, have been not unfrequent in other cases; and may not, therefore, in this, have been occasioned by the anæsthetic. 4th. The thickness of the abdominal walls (one and a quarter to one and a half inch) produced much difficulty in coaptating the edges of the incision. Large needles, two and three quarter inches long, were required; they must also be curved, and therefore annealed; and thus their points were spoiled. Still the latter must be carried through the walls obliquely, so as to pass between the abdominal aponeurosis and the peritoneum, while, at the same time, the former was hardly thicker than stout letter paper, and the latter not certainly recognizable at all. Still the risk of peritonitis was not partially enhanced by the delays thus produced; since they occurred either while the sac still protected the peritoneum, or while the wound was being closed.

V. The appearance of the catamenial discharge,* seventy-two hours after both ovaries had been removed, and its continuance for three days, appears, at first sight, to contradict the idea, now generally entertained by physiologists, that these organs originate the *nisus* which thus manifests itself. I should, however, consider the discharge, under such circumstances, as a mere uterine hemorrhage, resulting from the congestion of that organ produced by the operation; and as, therefore, being a most salutary phenomenon, and a highly favourable symptom. A patient on whom I operated, three years since, for an extensive laceration of the perineum, had a similar phenomenon occur on the third day afterwards; which also continued three days, and prevented the complete success of the operation. In that case, also, I think the exciting cause of the hemorrhage was of the same general character; the preceding regular period having ceased a week before the operation. I shall expect to learn that the theory above alluded to is confirmed by the future history of the present case.

The fact that the urine became free (℥viii every six hours) within forty hours after the operation, and continued so uniformly afterwards, was regarded as highly favourable at the time; and this, together with the fact that, at the end of eighty-five hours, she evacuated the bladder without instrumental assistance, was thought to be inconsistent with the idea that peritonitis was then impending.

VI. The pain complained of October 5th was probably produced by the patient's leaning upon her elbow in bed; and that in the right iliac region, which occurred on the 10th, and continued four days, I should attribute to her efforts as she sat up longer each day, and to the pressure on the uterus, and perhaps also on the ligatures directly of the small intestines, while thus erect in bed. A somewhat constipated state of the bowels is another element in the causation perhaps worthy of notice.

The violent attack of pain on the 19th of November may or may not have been excited by the removal of the last ligature that morning. I incline to the opinion that it *was* thus excited, though no undue force was applied to the ligature, and it is improbable that the peritoneum was at all implicated. It appeared to me possible that some, at least, of the ligatures were adherent to the abdominal walls alone, at my last visit, five weeks before (October 16th). But, in regard to the two ligatures first brought away, this opinion is shown not to hold, since they were both *untied* before they left the pedicle. The last ligature, however, *slipped off*, as was shown by the loop still remaining whole; and, therefore, might have been retained by granulations in the abdominal walls for days previous to its detachment. I judge this was the fact, and that a nerve being also implicated in its detachment, accounts for both the superficial character of the pain, and the rapid culmination of the attack. I am, however, by no means tenacious of this explanation.

But what became of the fourth ligature, of which no account is rendered

* Its last regular appearance had been ten days before.

by the patient? I doubt not that it was removed together with one of the larger ones. In all four of the ligatures, there were sixteen threads of silk. The last included two of these; and I doubt not one of the preceding was made up of eight threads, and the other of six. Two ligatures, thus removed together, would of course lie side by side when drawn out, however distant their internal extremities may have been before; and the patient could not be expected to remember to count the threads as they were removed. I shall doubtless request the next patient to preserve them for subsequent inspection.

VII. The pedicles were divided thus, : the *oblique* lines representing the cut edge, the circle (○) the puncture made by the needle, and the dotted line the level of the ligatures—in order that the loops might *slip off* on applying traction at the proper time, and thus the ligatures be the sooner detached. It appears, however, that only one of them became detached in that way, the rest having been previously *untied.* The one that *slipped,* also, was the last to come away; but the supposition has already been hazarded that it may have left the pedicle, and probably did, some days at least before it was detached. Whether, therefore, my idea as to dividing the pedicle will prove of any practical value, still remains to be decided. And whether the loop usually slips off, or cuts out, or becomes untied, after this operation, is a question previous reports do not enable me to decide, and which I now have under investigation.

VIII. The success of the operation I attribute to the fortitude and confidence of the patient; the comparatively slight adhesions of the diseased mass; the temperature, &c., of the room at the time and subsequently; accurate coaptation of the divided abdominal walls; and the judicious after-treatment of Dr. Jarvis, seconded by the faithful attentions of the three young gentlemen before named. I am positive that as much care and skill are necessary in closing the incision properly, as in performing the preceding operation.

Whether the operation of ovariotomy is ever justifiable, is a question which would certainly be out of place here. It is the writer's opinion that, if the patient's general health is rapidly failing (but not already too far prostrated), and the tumour is found to be not extensively adherent, so far as all the known methods, taken *together,* can decide that question, the operation *is* justifiable; *provided* the patient, after fully understanding its nature, strongly desires to have it performed, and has strong hopes of recovery therefrom. But it is an operation never to be urged, nor to be undertaken by an operator whose care does not include the minutest particulars, both prior and subsequent to its performance, which can affect its results.

And I cannot close without alluding to the obligations under which the medical profession in our country has been placed, by the full and precise reports of his now numerous operations for the removal of ovarian diseases, which Dr. W. L. Atlee has given from time to time in this Journal. But for these, my patient might perhaps not have been rescued from an early

death. For only accurate and minute reports of such cases are of any practical value to others; and this is the writer's apology for the length of this communication.

DART. COLLEGE, *Feb.* 1851.

NOTE.—It is a fact, certainly not without interest, that the first patient on whom the operation of ovariotomy was performed in this country was an *aunt* of Miss G. (though by *marriage* only), whose case has just been detailed. The operation alluded to (being the *minor* operation) was performed on the 5th of July, 1820, by Dr. Nathan Smith, Professor of Surgery in Dartmouth College, and was successful. The patient was a Mrs. Strobridge, of Norwich, Vt., ætat. 33.

For an account of the case, see "Medical and Surgical Memoirs," by Nathan Smith, M.D., Baltimore, 1831.

The *year* is singularly enough omitted in the report of the case. I have ascertained of Dr. H. Hatch, of Burlington, Vt., who was present at the operation, that it was performed thirty years ago last July.—E. R. P.

ART. XII.—*Cases in Surgical Practice.* By R. H. McILVAINE, M. D., Charlotte, N. C.

CASE I. *Adipose Sarcoma, involving the deep structures of the thigh.*—M. H., æt. 14, has been afflicted since birth with an abnormal growth upon the right thigh. When first noticed, the tumour was about the size of a pigeon's egg, situated upon the outer side of the thigh, about midway between the groin and the patella. It has been constantly enlarging ever since. Its present appearance is as follows: Commencing at a point about one inch below Poupart's ligament, it extends to within about the same distance of the upper margin of the patella, and from a line on the inside of the thigh, corresponding with the track of the femoral artery, to about the outer edge of the vastus externus muscle, thus encircling about three-fourths of the largest part of the thigh. The following are the dimensions of the tumour, ascertained by comparing the circumference of the right with that of the left thigh.

	Right.	Left.
One inch above the patella, ...	12 in.	9⅝
Junction of middle and lower third, . .	15½ "	10¾
Middle of the thigh, ...	16¾ "	12¾
Junction of upper and middle third, . .	15½ "	13

The motions of flexion and extension of the leg show that the tumour is attached to the *quadriceps femoris* muscle, outline of the tumour distinctly marked above and below, but on the sides it is impossible to determine accurately its extent. Diagnosis *simple adipose tumour.*

Oct. 7th, 1848.—I proceeded to remove the tumour, assisted by Drs. Williamson, Strong, Hutchinson, Gibbon, Clawson, and S. F. Gilmer. The patient being first placed under the influence of chloroform, I made an incision from the upper to the lower margin of the tumour, in the course of the

rectus muscle, penetrating into the substance of the tumour. This was joined by another commencing and ending at the same point, and curving outward so as to include a piece of integument about two inches in width at the widest part. The sartorius muscle appeared, covering the upper and inner part of the tumour, and thinned out to about three inches in width. Turning out the tumour from under this muscle, I proceeded to follow it to its attachments between the crureus and vastus externus. These attachments were very extensive and firm, and required for their separation a dissection deep into the muscular substance of the outer part of the thigh. The tumour was completely separated in six minutes. But little blood was lost. No artery required ligation. The wound was dressed with five sutures and adhesive straps. Union by first intention took place throughout the greater part, but the cure was retarded by a succession of abscesses, beneath the vastus externus muscle, which discharged large quantities of grumous pus, mixed with the detritus of the wound. These were followed by troublesome sinuses, one of which was laid open across the belly of the vastus externus muscle. The cure was perfect by the 1st January, 1849. No muscular weakness remaining.

Developed originally, as this tumour seems to have been, beneath the fascia lata, it appears to have gradually extended in those directions in which there was least resistance until it involved that membrane, so that it was distinguishable only at the margins of the tumour. It was attached extensively to the sartorius, rectus, crureus, and vastus externus muscles. Weight three and a quarter pounds avoirdupois.

Case II. *Adipose Tumour.*—Mrs. S., æt. 50, has been afflicted for fifteen years with a tumour upon the back of the left shoulder. At present, it extends from within two inches of the spine to about the insertion of the deltoid muscle upon the arm. Gives no pain, but from its size and weight is becoming exceedingly inconvenient.

April, 1847.—I proceeded to remove the tumour, assisted by Dr. Butt of Lincolnton, and Mr. (now Dr.) J. A. Shuford, medical student. The operation was commenced by an incision extending from near the spine of the third dorsal vertebra to the lower margin of the tumour upon the arm. This was joined by another commencing and ending at the same points, and including between them a large piece of integument. The tumour was then turned out, being found to adhere slightly to the deltoid and long head of the triceps muscle. The operation was completed in one minute. No vessel required the ligature. The wound was closed with sutures and adhesive straps, and in ten days the cure was perfect.

The morbid mass weighed six pounds, and presented all the characters of the simple adipose sarcoma.

Case III. *Strangulated Inguinal Hernia — Operation — Reduction impeded by enlarged Mesenteric Glands—Recovery.*—*Oct. 11th*, 1849. Called to Jim, a negro, æt. about 60, property of Daniel Mills. Patient has a large inguino-scrotal hernia of the right side, which has come down occasionally for a number of years. On the evening of the 7th instant, the hernia came down, and the patient not being able to reduce it as usual, Dr. Ardry was sent for. The doctor made repeated attempts, during the next twenty-four hours, to reduce the protrusion, but not being able to succeed, Dr. Williamson was called. At Dr. W.'s suggestion, the tobacco enema was administered, and during the state of extreme relaxation which followed, a vigorous effort was made at the taxis, but without success. I was then sent for, with a view to operation.

I found the patient with a good pulse, free from excitement, with only occasional efforts at vomiting; bowels obstinately costive; no additional efforts to return the bowel were deemed advisable, and at half past ten o'clock A. M., I proceeded to operate, assisted by Drs. Ardry and Williamson, and Mr. Parks, medical student. The several coverings of the hernia were carefully divided upon the grooved director, until the sac was exposed; upon opening this, about ℥j of bloody serum escaped. The bowel was of a light chocolate colour. It proved to be a piece of the small intestine about twelve inches long, with its mesentery, in which were a number of enlarged glands. The stricture was divided upon the finger by means of a probe-pointed bistoury; an attempt was now made to return the bowel, but without success. The stricture was further divided; but still the intestine could not be returned. The mass of enlarged glands seeming to form a body too large to pass through the opening, the efforts to reduce were continued, with intervals of rest, for about three-fourths of an hour, when, after again enlarging the opening very considerably, the hernia was reduced. Great fears of inflammation were entertained from the amount of handling to which the parts had been unavoidably subjected.

The wound was then closed, and the patient put to bed, having been upon the table about one hour. Ordered ol. ricini f℥ss, with tinct. opii gtt. x. No appreciable change in the pulse; patient not prostrated by the operation. I here resigned the case to the care of the attending physicians.

Oct. 25th.—Dr. Ardry reports that, for forty-eight hours after the operation, the symptoms were threatening. On the second day, the abdomen was tympanitic, the pulse feeble, quick, and frequent, no passage from the bowels. Large injections were successful in relieving the bowels, after which the case put on a more favourable aspect, and the patient was soon convalescent.

Case IV. *Pseudo-Membranous Croup — Tracheotomy — Death. — Dec. 20th,* 1849.—Called to W., æt. two years, in the advanced stage of croup; the total loss of voice, and peculiar cough, convinced me that it was of the pseudo-membranous variety. Administered at once ant. et pot. tart. gr. j, with pulv. ipecac. gr. x. This produced emesis at the end of half an hour, with the aid of a feather in the fauces. The patient appeared somewhat relieved, and I left for a few hours, directing repeated doses of syrup. scillæ comp., if the symptoms became aggravated.

On my return at four o'clock P. M., found my patient much worse, and during the suffocative paroxysms the danger of dissolution seemed imminent. I immediately administered a very active emetic, and, after waiting in vain for its operation for more than half an hour, I proposed, as the only hope, to perform tracheotomy. The consent of the parents was readily obtained, and at half past five P. M. I proceeded to operate. I had a bad light, inexperienced assistants, and, the child being fleshy, I was somewhat embarrassed in the operation, but happily succeeded in establishing a false opening in time to prevent suffocation, the danger of which had become extremely imminent. Indeed, when the trachea was opened the child seemed at its last gasp. I maintained the opening pervious by means of a tenaculum and probe, until the oozing had ceased, and then, clipping out a small portion of one or two of the rings with the scissors, the child was enabled to breathe freely without assistance.

The patient rallied favourably, and seemed much relieved for several hours. Gradually, the breathing became more difficult. The introduction of a probe, wrapped with lint and dipped in a solution of nitrate of silver or in simple

water, afforded temporary relief. Toward morning, it became evident that the disease had extended below the opening, and although small bits of false membrane were coughed up, the relief was only temporary, and at 6 A. M. it became evident that all hope must be abandoned. The patient expired of suffocation at 10 A. M., sixteen hours after the operation.

Case V. *Encysted Tumour, containing Feces.*—*Dec.* 1849, consulted on the case of Spencer, negro, æt. 30, the subject of anal fistula for about ten years. The patient reports that, about seven years ago, a tumour appeared between the anus and point of the coccyx. When first discovered, it was about the size of a hickory nut. It continued to increase till about four years since. Has never given much pain till about a month ago, when it broke and discharged "matter" for a few days, and then cicatrized. At present, the tumour is about the size of a large duck's egg, situated in the mesial line, immediately in front of the point of the coccyx, not tender on pressure, and exhibits a cicatrix about the centre of the prominence—the seat of the ulceration alluded to. Diagnosis, *adipose sarcoma.*

Feb. 23*d*, 1850. I proceeded to remove the tumour, assisted by Drs. Dunlap and Hutchison. The first incision laid open a cavity filled with *feces*, which I proceeded to turn out. I then explored the cavity, with a view to discover the opening through which the fecal matter had entered, but could detect no communication with the rectum. Satisfied that the cavity was a closed sac, the indication was plain, and I proceeded to dissect it out. This was accomplished without any wound of the continuity of the sac, except a very small snip with the point of the scissors. It was lined with a membrane having very much the appearance of the inner lining of the turkey's gizzard. The wound was closed with sutures, and dressed with a compress. The cure was accomplished in a few weeks principally by granulation. The fistula was operated on shortly after, and the patient discharged cured on the 26th March.

The origin of this tumour I suppose to have been as follows: An ulcer having perforated the coats of the rectum, fecal matter was forced out and impacted in the cellular tissue between the rectum and coccyx. Here, not giving rise to sufficient irritation to secure its discharge by ulceration, it became encysted. In the course of time, the original ulcer cicatrized, thus closing the communication between the rectum and the sac. This view is confirmed by the existence of a distinct cicatrix at the upper part of the sac, at the point of its closest connection with the rectum.

REVIEWS.

ART. XIII.—*Report of the Sanitary Commission of Massachusetts, made by the Legislature in* 1850. Printed by order of the Legislature. Boston: Dutton & Wentworth, State Printers, 1850. 8vo. pp. 544.

THE subject of a sanitary survey is not entirely new in this State, although it may not be familiar to all of its people. It was first brought before the American Statistical Association in the spring of 1847. That society referred it to a committee, with orders to prepare a memorial to be presented to the legislature, asking that measures be taken to ascertain the sanitary condition and resources of the commonwealth, and setting forth the reasons for, and advantages of, such an undertaking. This memorial was accepted by the association, and ordered to be presented to the legislature by the same committee. This was done in January, 1848. The House of Representatives referred the matter to the committee on the judiciary, who, after giving the friends of the measure a patient hearing, concluded that, as the subject was new both to the legislature and to the people, it would be inexpedient to undertake the proposed survey until some pains should be taken to inform the public of its plans and advantages; they therefore advised that a large edition of the memorial of the Statistical Association be printed for general distribution, and that then the whole matter be referred to the next legislature. The memorial was printed as House Document No. 16 for 1848, and very generally distributed through the State.

The Massachusetts Medical Society, at its annual meeting in May, 1848, took this matter into consideration, and referred it to the counsellors, to take such action as they might deem proper. The counsellors voted to memorialize the legislature, praying them to grant the petition of the Statistical Association. In January, 1849, the counsellors sent to the legislature a memorial, urging, at considerable length, this measure upon the government, and giving the reasons for which it seemed to them it should be adopted.

This memorial of the medical society was referred to a select committee of the legislature; and on their recommendation a large edition of this document, and the memorial of the Statistical Association of 1848, were printed for distribution among the members and people. At the end of the session in May, a resolution was passed authorizing the Governor "to appoint three persons to be commissioners, to prepare, and report to the next general court, a plan for a sanitary survey of the State, embracing a statement of such facts and suggestions as they may think proper to illustrate the subject." The commissioners were to have two dollars a day for the time they should be employed, and also to be paid for their expenses of travel, stationery, and postage. They were authorized to expend fifty dollars in books on this subject, which should be deposited in the State Library. Five hundred dollars were appropriated to meet the whole expenses of this commission.

The governor appointed Lemuel Shattuck, Esq., of Boston, Jehiel Abbott, M. D., of Westfield, and Nathaniel P. Banks, Esq., of Waltham, as members of this sanitary commission.

The labouring oar of this whole matter fell principally upon Mr. Shattuck, the chairman, who made the inquiries, and wrote the report, with the aid of his associates. Their report was presented to the legislature in April, 1850. It was then ordered to be printed. This was finished in December, 1850, and offered to the legislature in January, 1851, for their consideration and further action.

Thus it is seen that this matter has been before three successive legislatures; and after three years of urgency from the friends of the measure, it is matured so far as to have a plan brought forth in a tangible shape, and offered to the fourth legislature for their adoption. The legislators of Massachusetts surely will not be accused of any rashness or indiscreet haste in undertaking to ascertain the sanitary condition of the people of that intelligent and generous commonwealth.

This report of the commission is printed in an octavo volume of 544 pages, in the style of the reports of the Natural History Survey, and is now ready for distribution, or disposal otherwise, at the order of the general court.

The commission, in their plan, have not confined themselves to the original purpose of the proposers of this measure, which, like the British inquiries of a similar nature, was merely to inquire into the actual sanitary condition of the people, and ascertain the various influences that acted, for good or evil, upon their health, and when those facts should be made known, further plans would be suggested and adopted for the future well being and health of the people. But they have examined and discussed at great length all the direct and collateral topics connected with the matter of general and public health, and shown with great clearness the advantages that will result from the investigation of the connection between outward circumstances, domestic conditions, and personal habits, and health and life.

The report first contains a history of the sanitary movements abroad, and shows what has been done, and with what advantage, in other nations. Going back to ancient times, Mr. Shattuck informs us of the sanitary legislation and customs of Greece and Rome, and, coming down to modern times, he gives us a similar history of Great Britain, France, and Germany.

Very active and effective measures have been taken by some of the European governments to ascertain the sanitary condition of their people, and in all cases they have revealed such a state of things, in their outward circumstances or in their domestic life, as to leave no doubt that many of the causes of sickness and death existed and were removable, and consequently that much of the sickness might be prevented and many deaths postponed.

The report quotes from the sanitary documents published in Great Britain, and shows that there are frightful differences in the vitality of people in different districts and in different conditions of life. There are remarkable differences, in this report, between the town and country. Thus, it is ascertained, from a very extensive survey, covering about seven millions of people, that the annual deaths are, in the city districts, 27,073, and in the country districts 19,300, among one million of persons living in each class of places. The rate of mortality was one in 37 in the city, and one in 52 in the country. Here, then, is an annual excess of 7773 deaths in each million of persons living in the large and dense towns over the number of those who die in the country, in an equal population; and this excess must be chargeable to something connected with the density of population.

Some diseases prevail more, and are more fatal, in the towns than in the country. In a million living in each class of places, the mortality (average of four years) was as follows:—

	City.	Country.
Total deaths . . .	27,073	19,300
From Consumption and scrofula .	4,515	3,761
" Small-pox . . .	1,045	507
" Measles	914	354
" Scarlatina	988	478
" Typhus	1,254	998
" Epidemic and contagious .	6,013	3,422
" Teething	616	120

There are also great differences of mortality in the different parts of the same city, as, according to Mr. Chadwick, in London, in St. George's, Hanover Square, the average age at death is of the gentry 45, and of the labourers 27 years, while in St. Giles the ages are of the gentry 50, and of the labourers 17 years.

These last differences are connected with the supply of water, cleansing the streets, and ventilation of the streets and dwellings. Dr. T. Southwood Smith says that, "where fever is frequent, there is uniformly a bad drainage, bad sewerage, a bad supply of scavengers, and a consequent accumulation of filth." "If you trace down the fever districts on the map, then compare that map with the map of the commissioners of sewers, you will find that, where these commissioners have not been, there fever is prevalent, and on the contrary, wherever they have been, there fever is comparatively absent."

"Dr. Lyon Playfair calculates that, for one unnecessary death, there are also 28 cases of unnecessary sickness;" consequently, there are annually 217,668 cases of unnecessary sickness in each million of inhabitants of the large towns.

After reviewing the sanitary movement in Great Britain, Mr. Shattuck says that it is thus proved—

That the annual deaths in 10,000 people are 153 in the best, and 358 in the worst districts.

That the various forms of diseases are created, aggravated, and propagated by the narrow streets, crowded houses, filth, and the foul air that proceeds from decomposing animal and vegetable matters, whether in town or country.

That diseases and death are more frequent in the cities than in the country, and more in the narrow streets and crowded houses than in the wide and open streets and ample houses of the same city; and that this excess of disease and mortality falls mostly upon infants and persons between 20 and 30 years of age.

That the longevity of persons in bad, is 5 to 25 years less than in good situations, and that the former have a lower condition of life, less health and strength, and less productive power than the latter.

That these differences of life and death are removable by the removal of the noxious agencies and circumstances.

That the annual mortality of Great Britain might be reduced from one in 44 to one in 50 by the removal of these noxious causes.

That children born and trained amidst these noxious influences have a lower degree of physical, mental, and moral power, and hence they are comparatively feeble, sick, idle, improvident, vicious, and short-lived.*

It is now very natural to inquire, whether similar conditions and circumstances do not exist, to a greater or less extent, in this country, and whether they do not produce the same depression of life, and the same excess of disease and mortality, in Massachusetts as in England.

* Report, p. 46, &c.

The sanitary legislation of Massachusetts extends as far back as the year 1692. From that time to the present, laws have been enacted for the prevention or the removal of nuisances, &c., which might interfere with public health; for the establishment of drainage and sewerage, with reference to small-pox, and other contagious diseases, to insanity, and quarantine; and for the election of boards of health.

The whole sanitary legislation of this State, past and present, has been unstable, uncertain, and subject to many changes, which are sometimes made without apparent good reason. The laws in regard to this subject, as they now stand, form a very imperfect system, and are inadequate to the purposes for which they were made. They have been subjected to so many alterations, to repeals, partial or entire, that it is not now easy to determine what is in force.

In order to remedy this matter, the commission propose to establish an entire new law or code of laws, which shall cover the whole ground of health, sanitary police, and everything which has a direct or indirect connection with man and his powers of body.

Mr. Shattuck gives a succinct history of the epidemics that are known to have prevailed in New England since its first settlement. But, of course, this history is very imperfect for the want of due observations and records. This history is confined to the epidemics which have especially attracted attention, and excited alarm, and have had an observer willing to write their record. But there have doubtless been many epidemics that have had no observer to notice them, and no historian to record them and bring their history to us.

Epidemics must constitute only a part of the diseases that affect the people. Sporadic diseases, of every sort and everywhere present, in some form or other, are the principal destroyers of the health and the life of man. They have no record. It is not known how frequently they appear, nor how fatally they operate.

"For the last forty years, notwithstanding the mass of medical literature that has been published, less definite information has been obtained concerning epidemics than in the previous periods. The almost entire neglect of records, prior to the adoption of the registration system, renders it difficult to give anything approximating to an accurate view of the subject. If a careful examination were made into the history of each town, many important facts might be gathered. But it is curious and lamentable to observe, in looking over our published local histories, how little attention has been paid to this matter. *The history of the health of the people* should be regarded as the most important part of history. Yet it has generally been considered unworthy of notice, or, if noticed at all, merely among the incidental matters of little consequence."*

This is the object of the proposed sanitary survey: to ascertain the diseases that appear and prevail in the various districts and situations, their frequency and intensity, their fatality, and the circumstances and habits that are connected with them.

Without pretending to give a complete history of these matters, or even approaching it, Mr. Shattuck alludes to the influences of various circumstances upon the production and results of disease. He states a few facts in regard to seasons, occupations, and domestic conditions, to show that they certainly have some, and probably great, influence on human health and life, and to show that these matters are worthy of further and minute inquiry, in order to determine exactly the measure and manner of their influence, and whether they can be modified or controlled by the art of man.

* Report, page 80.

So far as can be determined from a comparison of the Registration Reports from the rural districts of Massachusetts for seven years, with the bills of mortality of Boston for ten years, the country is the more healthy in the summer, and the city in the autumn, both nearly alike in the winter and the spring. August and September are the most fatal months in the city, on account of the greater prevalence of diseases of the digestive organs. September and October are the most fatal months in the country, on account of the greater prevalence of fever.

The nature of the occupation has doubtless much influence on health and life, but to what extent remains to be determined by further investigation. The seven annual Registration Reports of Massachusetts give tables of the average ages of males engaged in several professions, who were over twenty years old at death. These are condensed in the report into one table,* which we here quote :—

Deaths.	Occupation.	Average age.	Deaths.	Occupation.	Average age.
4737	Farmers	64.89	46	Bakers	46.69
39	Hatters	58.79	81	Cabinet-makers	44.80
110	Coopers	57.39	73	Stonecutters	44.46
114	Clergymen	56.64	17	Paper-makers	44.29
55	Lawyers	55.47	902	Shoemakers	43.41
137	Physicians	55.	1609	Labourers	42.79
287	Blacksmiths	54.49	1061	Seamen	42.47
613	Carpenters	51.16	110	Painters	42.36
323	Merchants	50.73	138	Fishermen	41.63
65	Tanners and Curriers	49.90	115	Manufacturers	40.48
135	Masons	48.55	110	Mechanics	37.20
213	Traders	46.79	34	Printers	36.91

These few facts render it very certain that there is a difference in the value of life in the different occupations, and very probably, that this difference is constant.

The diseases or causes of death differ in different situations, and especially in city and country. Mr. Shattuck has analyzed the causes of 57,484 deaths, in the rural districts of Massachusetts, from 1842 to 1848; and of 25,795 deaths in the city of Boston from 1840 to 1849.†

Among 10,000 deaths, in each place or class of places, from known causes, there died of the various classes of disease—

	Country.	City.
Zymotic or endemic Epidemic and contagious	2755	3159
Of uncertain seat	1299	1398
" Nervous organs	905	927
" Respiratory "	2959	2240
" Circulatory "	192	173
" Digestive "	490	1221
" Urinary "	45	30
" Generative "	114	158
" Locomotive "	51	53
Skin	16	23
Old age	768	246
Violence	406	372
	10,000	10,000

* Report, p. 87.

† Report, p. 90.

There appear to be many more deaths from the zymotic diseases, and from diseases of the organs of digestion and generation, in the city than in the country, but there seem to be many more deaths from pulmonary diseases and from old age in the country than in the city. The other classes of causes present no very marked difference in their effects upon these places.

The proportion of deaths to those from all causes was greater from 48 and less from 44 of the specified causes in the city than in the country.

These differences were the greatest from the following causes.

Deaths from certain causes among 10,000 from all causes:—*

	Country.	City.		Country.	City.
Dysentery	420	370	Hooping cough	89	133
Fever, typhus	909	645	Measles	73	228
Apoplexy	102	73	Small-pox	19	134
Paralysis	166	79	Thrush	2	38
Consumption	2389	1471	Atrophy	36	201
Old age	768	246	Debility	28	103
Colic	26	5	Hydrocephalus	212	367
Peritonitis	12		Pneumonia	441	634
Drowned	142	83	Enteritis	155	205
Cancer	123	56	Teething	42	219
Cholera	52	281	Child-birth	104	151
Fever		65	Intemperance	45	78

These are not stated in the report as the sum of all the knowledge that is desirable or obtainable, nor as establishing any law, but only as indications of differences, which should lead to further and more varied inquiry. But the facts, so far as known, lead these commissioners to state—†

That there is a great difference of life in various localities, circumstances and conditions of men and society.

That there are causes of unnecessary sickness and premature death here among us as well as in Europe.

That there is need of legislative action to provide a remedy for the removal and the prevention of these evils.

That typhus fever, cholera, dysentery, small-pox, and other epidemics—consumption, and other fatal diseases—constantly or frequently prevail in this State.

That these active causes of diseases are increasing among us.

And that a thorough investigation is needed to ferret out the whole extent and all the circumstances of disease and mortality; and to ascertain the exact relation of these events to other events and circumstances that may seem to be their causes. There is also needed a more appropriate and more effective system of legislation, which shall reach all the circumstances of life, and all the causes of sickness and death, and provide for the protection of the one, and the prevention and the removal of the other; and thus, by the ever present and strong arm of the government, secure to the people the means and opportunity of enjoying the highest degree of health and the longest life consistent with their nature and constitution.

For this purpose, the commissioners propose to repeal all present laws respecting health and sickness, and re-enact all that are useful and adapted to the wants and conditions of the present time, and add such others as are needed to complete the sanitary code, and establish a perfect sanitary police in this commonwealth.

* Report, p. 90, &c.

† Report, page 103.

The proposed law fills fifteen pages,* and is divided into forty sections. It embraces a plan for obtaining annual reports of the sanitary condition of every town and city, for the registration of births, marriages, and deaths; for the detection and the removal of nuisances; and for the regulation of burials.

Sec. 1.—Provides for the appointment, by the governor, of seven persons, who, together with the Governor and the Secretary of the Board of Education, shall constitute the State Board of Health. The seven are to hold their offices seven years, but one is to go out, and his place to be filled by re-appointment, or by another, in each year.

Sec. 3.—Provides for the election of a Secretary of this Board, who shall be the principal executive officer.

Sec. 4.—Requires that the Board of Health execute the sanitary laws of the State; decide all sanitary questions proposed to them by the State, or by towns; advise as to the location of public buildings; visit, and superintend the sanitary condition of the public charitable institutions; instruct the local Boards of Health as to their powers and duties; superintend the decennial enumeration of the people of the State according to the constitution; and make a report in each year to the legislature of the sanitary condition of the State. They are authorized to purchase books relating to public health, to the amount of fifty dollars annually, for their use and for that of their successor in office.

Sec. 6.—Requires the Secretary to keep the accounts of the Board; to make a sanitary survey of any town or district when directed by the Board; to superintend the registration of births, marriages, and deaths; to superintend the decennial enumeration of the people, and prepare the abstracts from the returns of population; to take charge of all the local reports from the several towns; to report to the Board annually the sum of the sanitary information received, and to diffuse among the people all this information, so that each town and family may profit by the experience and the wisdom of all the rest.

Sec. 8.—Provides for the appointment of local Boards of Health by the mayors and aldermen of the cities, and by the selectmen of the towns, in each of these several places.

Sec. 9.—Requires these local Boards to execute the sanitary laws of the State and the orders of the general Board, and, as far as possible, prevent sickness and prolong life by the removal of the causes of disease.

Sec. 11.—Authorizes these local Boards to purchase sanitary works for the benefit of their respective towns and cities.

Sec. 12.—Requires the local Boards to appoint a Secretary, and authorizes them to appoint a Medical Health Officer and a Surveyor, and to fix the compensation for these persons.

Sec. 13.—Requires the Medical Health Officer to ascertain the existence of diseases of various kinds, to compare their prevalence and results in various seasons and in different years, and in the different districts and classes of society; to ascertain any atmospheric, local, or personal causes of the temporary increase or decrease of disease and mortality; to point out nuisances, or other causes of disease; to suggest remedies for sanitary evils, and in all other ways execute the sanitary orders of the local Board.

Sec. 15.—Requires the Surveyor to prepare a map of the town, or of any of its parts, showing the location, level, and grades of the roads and streets, mill-ponds, watercourses, and seats of nuisance, and to prepare plans of drainage and sewerage.

* Report, page 307 to 321.

Sec. 16.—Authorizes the local Boards to make regulations, for ascertaining
The causes of all the deaths in the town.
The prevailing diseases in the towns, and their causes.
The amount of sickness in different classes of people.
For preventing or mitigating diseases.
For affording medical relief to persons diseased or threatened with disease.
For abating nuisances.
For restraining persons or articles affected with the small-pox contagion.
For establishing hospitals for contagious diseases.
For constructing sinks, ash pits, privies, cesspools, drains, and sewers, and for the removal of every sort of offal.
For cleansing grounds, buildings, and vessels.
For regulating the location of chemical works, slaughter-houses, and every kind of building or process that may be offensive or injurious.
For regulating the sanitary condition of houses and shops that may be crowded, and the heat and ventilation of school houses, and other public buildings.
For regulating the sale of unwholesome food and drink, intoxicating liquors, adulterated medicines, &c.
For the superintending of burial-grounds and interments.
For the registration of births, marriages, and deaths;
And for executing all other sanitary orders of the General Board of Health.

Sec. 17.—Authorizes the local Board in any sea port to establish quarantine.

Sec. 18.—Requires that the head of any family in which a case of small-pox exists to give notice of it to the Board of Health.

Sec. 21.—Requires sheriffs, marshals, and constables to execute the orders of the Boards of Health in removing nuisances and persons affected with contagious diseases, breaking open houses or other places where these may be, and impressing, for the use of the sick, houses, nurses, attendants, and other things needful for this purpose.

Secs. 22, 23, 24.—Provide for the payment of all these operations, and all expenses of the Board of Health by the town or city.

Sec. 25.—Requires the general Board to take measures to prevent the spread of contagion.

Sec. 26.—Imposes penalties on the resistance to, or infraction of, the rules and orders of the Board of Health.

Sec. 27.—Requires the local Boards to report annually to the general Board the sanitary history and condition of their towns and cities, and to recommend such measures as seem to them improvements.

Sec. 28.—Imposes a penalty on any town which shall neglect to appoint a Board of Health, and upon the Board if they neglect to report to the general Board.

Secs. 30, 31, 32.—Require the owner of any property to remove any nuisance or filth from it, at his own expense, on notification for this purpose from the Board of Health, and if he neglect to do so, he shall be fined for each day's negligence, and the Board shall remove it at his cost.

Sec. 35.—"Any person injured, either in his comfort, or in the enjoyment of his estate, by any nuisance, may have an action on the case," and recover damages of the person by whose action or negligence the nuisance is produced or continued.

This is the substance of the law proposed by the sanitary commission.—There are many details and incidental and collateral minutiæ and explana-

tory matters, necessarily omitted here, which give the system a completeness in its plan and effectiveness in its operation.

This law is now proposed to the government of Massachusetts for their adoption. After the attention and encouragement of three successive legislatures; after the careful consideration of two committees, and one commission appointed expressly for this purpose; after the active urgency of the friends of this measure, who, as naturalists, as philanthropists, and as political economists, have pressed it upon the people and the law-givers through several years; after all this interest and labour in the production of the plan, it is confidently hoped that this, the fourth legislature that has had the matter under consideration, will adopt the propositions of the commission, and provide by public law for the security of human life and health, as effectively as they do for the security of property.

The commission recommend a series of fifty measures, which constitute their plan of sanitary reform. These fifty recommendations are stated in the form of specific propositions, and are supported by many facts and arguments, which run through one hundred and thirty-two pages of the report.* Many of these measures are already indicated in the law which we have already analyzed. Others are subsidiary, and need further explanation.

In the construction of the general Board of Health, the commission recommend† that it should contain:—

1. "Two physicians, at least, of scientific attainments, and of extensive practical experience in their profession, thoroughly understanding sanitary science, and deeply feeling the importance of wise sanitary measures."
2. "One counsellor at law, who, besides the general knowledge of law and medical jurisprudence, might especially be able to investigate any legal question that might arise."
3. "One chemist or natural philosopher. Many questions relating to the influence of the elements on the production or prevention of disease may require the special investigation of an experienced chemical philosopher."
4. "One civil engineer, possessing competent knowledge to determine the best methods of planning and constructing public works, and the best architectural sanitary arrangements of public buildings, workshops, and private dwellings."
5. "Two other persons of acknowledged intelligence, good judgment, and practical experience in the common affairs of life."
6. "All should make themselves thorough masters of the objects of their appointment, should have sagacity and foresight to perceive the bearing and effect of every measure proposed, be eminently practical men, wise in deliberation, and judicious in decision."

The Secretary is to be the active and efficient officer of the Board. "He should be thoroughly educated in the science of public health, and the causes and prevention of disease; and be capable of arranging, analyzing, and combining the facts that may be collected, and of making such deductions from them as will be most useful to science." For this purpose, he must be a man of high order of intellect and education. He must devote his whole time to the work; and for this he should receive a competent reward.

The local Boards, like the general Board of Health, are to be somewhat permanent. They are to consist of three, five, or seven persons, each of whom is to hold his office as many years as there are members, one being appointed in each year. Besides these, the principal officer and the clerk or registrar of the town or city are to be *ex officio* members of the Board.

These local Boards are to make a report annually to the town of the sani-

* Pages 109 to 241. † Report, page 113.

tary condition of the town or city during the preceding year, and to send a copy of their report to the Secretary of the general Board.

The fifteenth recommendation proposes "that provision be made for obtaining observations of the atmospheric phenomena, on a systematic and uniform plan, at different stations" in various parts of the State.

The precise influence of the atmosphere in its various conditions upon health and disease is not yet determined. That this influence is very great in the production of colds, influenza, and other epidemic and sporadic diseases, is hardly doubted by any: but how far this extends is yet to be ascertained by many and varied observations of the atmospheric phenomena, and of co-existing disease; both of which must be systematized and compared, in order that valuable deductions may be drawn from them, and the true connection between these classes of facts determined.

The reports of the Registrar General of England for several years contained the meteorological observations which were made at the Royal Observatory at Greenwich, in connection with the returns of deaths and diseases. Similar combinations of meteorology with mortality have been published by M. Quêtelet, at Brussels, in Belgium. The legislature of Massachusetts has already ordained the establishment of several stations in various parts of the State, not exceeding twelve in number, "where shall be deposited the instruments necessary for making systematic observations in meteorology, according to the plan recommended by the Smithsonian Institute, at an expense not exceeding one hundred dollars for each."* The results of these observations, when compared with the sanitary reports, and the bills of mortality, will throw much light on the connection of the atmospheric condition and influence with health and disease.

We would call public attention especially to the sixteenth recommendation in this report: "That, as far as practicable there be used, in all sanitary investigations and regulations, a uniform nomenclature for the causes of death and for the causes of disease."

A uniform nomenclature of diseases and their causes is as important in all descriptions and reports respecting sickness and mortality as a uniform grade of instruments is in meteorological reports, or as a uniform standard of weights and measures is in all commercial regulations.

It is difficult to conceive of so great uncertainty, variety, and inaccuracy in the application of terms in any other science as in the reports of mortality and its causes, and in the popular notions and conversation upon these subjects. Various names are used to designate the same facts and conditions, and the same term is applied at different times and in different places to describe different diseases. There is, among physicians, some inaccuracy of diagnosis and more inaccuracy of language, and among the people both of these prevail to a great extent.

The Registrar-General of England, in his seventh Report,† publishes a list of all the various names and terms, intended to describe diseases and the causes of death, that came to his office in the reports of the local registrars throughout the kingdom. They amount to 1177. These, however, are reduced to 95 in the nosological arrangements of these reports.

Perhaps, if we could collect the terms which are used in conversation, or in writing, by the friends of the deceased, or by the physicians, or by others who should report, to designate the causes of death throughout the United States, we should find as great a variety of terms as is found in England.

* Acts and Resolves of March, 1850, chapter 1. p. 104.
† Pages 293 to 314.

We have now before us the registration reports and bills of mortality of two States and of several cities. The following are the numbers of terms used in these to designate the causes of death:—

	Year.	Number of causes of death.		Year.	Number of causes of death.
Massachusetts	1843	106	New York City	1844	96
"	1847	97	"	1849	118
New York State	1847	153	Boston	1837	97
"	1848	175	"	1849	89
Charleston, S. C.	1828 to 1845	236	Baltimore	1845	85
Philadelphia	1840	208	"	1849	95
"	1846	222	Providence	1849	74
New Orleans	1849	197	Lowell	1849	59
Washington	1849	148			

It is not necessary here to show the precise difference between the nosological nomenclatures of these different States and cities. These facts are sufficient to show that they are very unlike. It is not to be supposed that the distinct diseases or causes of death in Charleston, S. C., are to those of Lowell, Mass., as 236 is to 59, or that those of Philadelphia are to those of Boston in the ratio of 222 to 97, as is apparent from the bills of mortality of these cities. But, making all due allowance for the difference of climate and endemic influence, and for some rare diseases which may occur in some places, and in some years and not in others, and also for variety of accidents which are reported as distinct causes, the difference in these numbers is probably to be charged mainly to the difference of minute diagnosis of disease, or to difference of language in those who make the reports of deaths, or in those who make and publish the record. Some reporters, being unacquainted with scientific nosology, give popular names of the diseases or causes of death, which may be many and various as applied to the same disorder or lesion; or different reporters may give the same name to various diseases. Some registrars record these as they are reported—others condense them, and, instead of the varying popular names, give the single scientific synonyme.

But, whatever may be the cause of these differences of nomenclature in the bills of mortality, it is manifest that the language used in Charleston and Philadelphia to designate diseases or causes of death is not like that used in Boston, Lowell, and Providence, to describe similar facts. It is, therefore, very difficult, if not impossible, to combine the reports of deaths and their causes in these various places, and arrange their facts in one system, in order to afford the broadest ground of reasoning and inference, in respect to life and mortality.

The sanitary commission had this difficulty in view, and in order to meet it, they proposed the adoption of one uniform nomenclature or system of naming diseases, by all the reporters and registrars in this State. The commission spoke for Massachusetts alone; but it is to be hoped that their suggestion will go farther, and that their nomenclature will be adopted by all the medical writers and registrars in all other States of the Union.

The Massachusetts Medical Society, at the request of the commissioners, directed their committee to prepare a nosological system, to be used by the registrars of the State. The system which they prepared, and which is adopted by the commission, and published and recommended in their report, is mainly that which was prepared by Mr. William Farr, of London, for the Registrar-General of England, and is used in all the English Registration

Reports. There are some few alterations, to suit the difference of diseases in England and America. It is similar to the nomenclature of diseases prepared by a committee of the American Medical Association, and printed in their Transactions for 1847.

This arrangement divides the diseases into twelve classes:—

I. Zymotic, or endemic, epidemic and contagious diseases.
II. Diseases of uncertain or variable seat.
III. " Brain and nervous system.
IV. " Organs of circulation.
V. " Respiratory organs.
VI. " Digestive organs.
VII. " Urinary organs.
VIII. " Generative organs.
IX. " Locomotive organs.
X. " Skin.
XI. Old age.
XII. External causes.

These classes are subdivided into one hundred and eight diseases, which we here quote entire from the report* of the commission.

I. *Zymotic diseases.*

1 Cholera,
2 Cholera Infantum,
3 Croup,
4 Diarrhœa,
5 Dysentery,
6 Erysipelas,
7 Fever, Intermittent
8 Fever, Remittent
9 Fever, Typhus
10 Hooping Cough,
11 Influenza,
12 Measles,
13 Scarlatina,
14 Small-pox,
15 Syphilis,
16 Thrush.

II. *Diseases of uncertain or variable seat.*

17 Abscess,
18 Atrophy,
19 Cancer,
20 Debility,
21 Dropsy,
22 Gout,
23 Hemorrhage,
24 Infantile disease,
25 Inflammation,
26 Malformation,
27 Mortification,
28 Scrofula,
29 Sudden,
30 Tumour.

III. *Brain and nervous system.*

31 Apoplexy,
32 Cephalitis,
33 Chorea,
34 Convulsions,
35 Delirium tremens,
36 Epilepsy,
37 Hydrocephalus,
38 Insanity,
39 Paralysis,
40 Tetanus,
41 Organs, disease of

IV. *Organs of circulation.*

42 Aneurism,
43 Pericarditis,
44 Organs, disease of

V. *Respiratory organs.*

45 Asthma,
46 Bronchitis,
47 Consumption,
48 Hydrothorax,
49 Laryngitis,
50 Pleurisy,
51 Pneumonia,
52 Organs, disease of

VI. *Digestive organs.*

53 Ascites,
54 Bowels, disease of
55 Colic,
56 Dyspepsia,
57 Enteritis,
58 Gastritis,
59 Hernia,
60 Intussusception,
61 Peritonitis,
62 Quinsy,
63 Stomach, disease of

* Page 303.

64 Teething,
65 Ulceration,
66 Worms,
67 Hepatitis,
68 Jaundice,
69 Liver, disease of
70 Pancreas, disease of
71 Spleen, disease of

VII. *Urinary organs.*

72 Cystitis,
73 Diabetes,
74 Gravel,
75 Kidney, disease of
76 Nephritis,
77 Organs, disease of

VIII. *Generative organs.*

78 Childbirth,
79 Paramenia,
80 Puerperal fever,
81 Organs, disease of

IX. *Locomotive organs.*

82 Rheumatism,
83 Joints, &c., disease of
84 Hip, disease of
85 Spine, disease of

X. *Skin.*

86 Fistula,
87 Purpura,
88 Ulcer,
89 Skin, disease of

XI. *Old age.*

90 Old age.

XII. *External causes.*

91 Accident,
92 Burns and scalds,
93 Drowning,
94 Execution,
95 Freezing,
96 Glanders,
97 Heat,
98 Hydrophobia,
99 Intemperance,
100 Lightning,
101 Malpractice,
102 Murder,
103 Necusia,
104 Poison,
105 Starvation,
106 Suffocation,
107 Suicide,
108 Wounds,
109 *Unknown*,
110 *Still-born*.

Mr. Farr's system, used in the English Reports, includes *hydrophobia* in the first instead of the twelfth class, and omits *remittent fever*. It puts *quinsy* among the diseases of the respiratory instead of the digestive organs. It includes *ischuria* and *stricture* among the diseases of the urinary organs, *ovarian dropsy* among the diseases of the generative organs, *carbuncle* and *phlegmon* among the diseases of the skin, and *cold* and *privation* and *violent deaths* among the external causes, which are omitted in this system of the sanitary commission. It omits also *puerperal fever* among the diseases of the generative organs, *fistula* and *purpura* among diseases of the skin, and the whole of the class of external causes excepting *intemperance*, which are included in the American system.

The seventeenth recommendation advises that,

"In laying out new towns and villages, and in extending those already laid out, ample provisions be made for a supply in purity and abundance of light, air, and water; for drainage and sewerage, for paving and cleanliness."

We have already called the attention of the readers of this Journal* to the importance of this matter. And we cannot omit this opportunity to urge it again upon the people of this country. Our population is fast gathering into dense masses; new villages are created, villages are growing into towns, and towns into cities, and old cities are expanding their borders and condensing their interior districts. The ratio of increase of population within the last thirty years has been greater, and in some places very much greater, in the cities and dense towns than in the country parts of the States to which they belong.

* Vol. xv., p. 419, April, 1848.

In this development of new towns and cities, and in this extension of the old cities over their rural neighbourhoods, the manner of the growth and change is mostly left to private interest and to chance. The general plans, if they exist at all, are arranged and the streets are laid out as the present temporary convenience may suggest, or as the interests of the land proprietors may require. The questions of the facility of present travel or of conducting business, the cost to the public of building the road and the sale of the lots, are first considered in preparing or extending the sites of towns. Very few of them, in their incipient and amorphous stages, have their destinies shaped by that far-reaching economy that looks upon vacant lands as the seat of a future city, and arranges the plans, lays out the streets, and determines their direction, width, and grades, in reference to the sanitary wants of a dense population that shall ultimately cover them.

When the streets are first run through the open fields, a passage way for travel only seems to be needed; and even when the houses are first built, they are not high, and the land being comparatively cheap, the buildings are set back with yards between them and the highway. Thus far the public wants are satisfied, for they need and demand no more space for their use. But when the pressure of population and business, and the increased value of land, line these highways with high and continuous houses and shops close by their borders, then the streets are found to be narrow and dark, and the want of more room for light and ventilation is felt.

As population becomes more dense and land more valuable, the owners of vacant lots and gardens find it for their interest to run courts into them, and line these with houses. These courts are closed at one end, and sometimes at both, except by an arched passage leading under the buildings at one end into the open street. Sometimes one court leads from another. These places are generally very narrow, and the houses that border upon them are often high. Thus the ventilation in great measure is excluded, or reduced down to the lowest point that art and cupidity can bring it. And light is provided in the same sparing way. Consequently, two of the great essentials of life and enjoyment, light and air, which are offered by a beneficent Providence with unlimited bounty, are supplied to the dwellers of these narrow and almost closed courts with the most grudging parsimony.

The lands into which an old city expands, or over which a new city is created, are usually in the hands of many proprietors, who have no other interest than to convert their lots into money. All that is not thus converted is lost to them. No one of them feels it to be his duty, or is induced by his views of his own interest, to provide for the wants of future generations of dense population, by leaving unoccupied any open fields for common and public use. Consequently, our American cities are growing up and expanding, without commons and public grounds, places of promenade for men and women, and play for children and youth, apart from the common thoroughfares; or, if they are provided, it is with few exceptions done so meagrely as to fall very far short of the wants of the inhabitants of a compact city.

If this recommendation of the commission should be universally adopted, and the projectors of new cities, or those who expand any old city or town, were required to lay their plans, arrange their streets as to direction, width, and grade, and to leave open grounds for public use, solely in reference to the life and energies of the dense population of the future city, health, comfort, and productive power would be increased, the earnings would be augmented, the expenses of sickness and the cost of conducting business would be diminished, and wealth multiplied through coming generations beyond the present calculations of the projectors.

The commission recommend that all public buildings, churches, school-houses, court-houses, theatres, and halls for public assemblies of whatever nature, be planned and built with express reference to the health of the occupants, and this be considered especially in regard to the situation, warming, and ventilation.

They advise that all persons, whenever they erect any building, whether for dwelling or for the purposes of business, give notice to the local Board of Health of the sanitary arrangements. They advise that this local board very carefully notice the sanitary condition and circumstances of people dwelling or working in the vicinity of ponds, and especially of such as are alternately flowed and drawn off for mills.

The thirty-third recommendation advises "that the general management of cemeteries, and other places of burial and of the interment of the dead, be regulated by the local boards of health."

We have already spoken of this subject at considerable length,* and we are now glad to see the opinions which we then gave, sustained by public authority, and urged upon the government for their adoption, and upon the people for their action.

Proper respect for the dead, and the tenderest regard for the agonized sensibilities of their relatives, are perfectly consistent with a due regard to the health of the living. On the contrary, the manner of burial which is common in many cities and towns is disrespectful to the deceased, revolting to the feelings of mourning friends, and injurious to public health.

All our notions of comfort in sickness, all our satisfactory associations with death, are connected with retirement and peace. The true respect for the dead, and regard for the feelings of surviving friends, require that the resting-places of the deceased should be in the fields of quiet and seclusion, apart from the scenes of labour and business, the haunts of indifference and revelry, and the tumult of business. They should rest where none come but to contemplate, where the mourner can retire to commune with the departed, undisturbed by the noise of busy life.

The old cemeteries are in the midst of dense streets and the crowded population of many cities and towns. The graves, which are sometimes pits, are dug as near to each other as possible, and the corpses are piled one upon another, from the depth of many feet in some places to within a few inches of the surface. Thus, these burial-grounds are filled and filling to their utmost capacity with the bodies of the dead, which form almost one mass of decomposing and corrupting flesh. During this process of decay, they send forth their gases and fluids to affect the neighbouring springs and waters that percolate through the earth, and to rise above the ground and vitiate the atmosphere.

The health of the living must necessarily suffer, to a greater or less extent, from drinking the waters which are thus affected, by breathing the air which is thus tainted, or by the absorption through the cutaneous surface of any of the exhalations from the decomposing bodies of the dead.

The establishment of rural cemeteries in the vicinity of cities and out of the villages meets and obviates these objections. The effluvia which they send forth cannot reach the dwellings to corrupt the air, nor the gases reach the springs to vitiate the drink of the living and to impair their health. They leave the dead in their long homes in quiet and peace, undisturbed by the cupidity that removes them in order to sell or let their graves to new

* Journal, No. 17, p. 131, Jan. 1845.

occupants, and there the mourners can retire and be alone with the departed friends.

The twenty-sixth recommendation advises "that measures be taken for preventing or mitigating the sanitary evils arising from foreign immigration."

The commission, after informing us of the number of immigrants that arrived in Boston, "125,000 within the last four years," shows that many of these foreigners bring their poverty and their low health from their native lands. In 1834, the poor law commissioners of England recommended that the parish officers be authorized to pay the cost of the transportation of any of their paupers to a foreign country.

"Some poorhouses have been emptied, and their inmates transported to America. The stream of emigration has increased, and seems to gain a new accession of strength in every passing year. Massachusetts seems to have resolved itself into a vast public charitable institution. Into her institutions are admitted the emigrant pregnant woman at her lying-in, the child to be nursed, the pauper to be supported, the criminal to be punished and reformed, the insane to be restrained and cared for, the sick to be nursed and cured, the dead to be buried, the widow to be comforted, the orphan to be provided with a substitute for parental care; and here ten thousand offices of social and personal kindness and charity, not recognized by the laws of the State, costing thousands upon thousands of dollars, are bestowed."*

"Our own native inhabitants, who mingle with these recipients of their bounty, often become themselves contaminated with diseases, and sicken and die; and the physical and moral power of the living is depreciated, and the healthy, social, and moral character we once enjoyed is liable to be forever lost. Pauperism, crime, disease, and death stare us in the face."†

There is much reason for supposing that foreigners, and especially the natives of Ireland and their children, in this State, have a lower degree of health than the natives of this country of Anglo-Saxon origin. They furnish much more than their due proportion of the inmates of our hospitals, poorhouses, and prisons.

From all the facts that can now be obtained relative to the health and longevity of our foreign population, it is very probable that their vital force is lower than that of the natives. They, especially the Irish immigrants, seem to have less physical, intellectual, and moral power, and hence they are more frequently sick, they die at earlier periods, a larger proportion of their children die, they are less capable of supporting themselves, they are more frequently led to violate the laws; whether this is owing to native and inherent weakness, or to the influences of this climate, or the circumstances and conditions of a strange land and a strange society, is yet to be revealed.

The thirty-seventh recommendation of the commission is worthy of very careful consideration, and we commend it to the people in all parts of the country. They advise "that a sanitary association be formed in every town and city in the State, for the purpose of collecting and diffusing information relating to public and personal health."

Most of the sciences and arts, and the important interests of the people, have their associations to encourage and establish them. The friends of these find great advantage from these combinations to gather and diffuse knowledge. Agricultural societies have done much to elevate and advance that profession. By their mutual consultations, by their exhibitions, by their reports and their journals, they have brought to one focus the wisdom and the experience of every part, and again they have spread these before the whole. Thus, all the people have been induced to look to the higher, and many to the highest

* Report, page 205. † Ibid.

standard, and have endeavoured to improve their own works thereby, and all have consequently made great advancement. Societies are everywhere formed to create an interest in and for the diffusion of the principles of other arts and the strengthening of other interests. By meetings and discussions, by publications and by example, they excite a love for, and gather and extend the knowledge of, the principles which they desire to cherish.

By the same means, an interest may be created in the laws of health; a knowledge of the elementary principles of life may be obtained and diffused, and the people led to understand what these are and how to apply them in their self-government, in all the chances, labours, and affairs of common life. They may be induced to inquire, whether human life cannot be improved as well as the life of the lower animals; whether the deficiencies of health and strength, the discomforts, pains, sickness, and early mortality may not be owing to causes which can be removed; and whether all the means and opportunities that are offered to man for the development and maintenance of his powers are used to their best advantage.

These sanitary associations are now common in England: and there they are doing great good in ferreting out sanitary evils and the causes of low health and sickness, and thus creating a public desire and will to remove or ameliorate them. Their addresses and their journals are full of interest upon these topics, and teach us, as well as themselves, valuable lessons in regard to the practical advantages of obeying the law of life.

The London Statistical Society has been very active in this matter, and has caused some important investigations as to the condition and health of the people and especially of the poorer classes. Their reports are printed in their journal, and are worthy the careful study of the people of America as well as of England.

We earnestly hope that, according to the suggestions of the commission, similar societies will be formed in this country. There should be, in every town and city, associations of men in pursuit of the best means of developing strength and maintaining health, jealously watchful of every nuisance and every injurious habit and custom, looking carefully after every defect and circumstance that may, in the least degree, interfere with public or private health, with the fullness of human power on earth.

The thirty-eighth, thirty-ninth, fortieth, and forty-first recommendations of the commission advise,

"That tenements for the better accommodation of the poor be erected in cities and villages."

"That public bathing-houses and wash-houses be established in all cities and villages."

"That whenever practicable the refuse and sewerage of cities and towns be collected and applied to the purposes of agriculture."

"That measures be taken to prevent, as far as practicable, the smoke nuisance."

These are worthy of commendation; we have already spoken of them;* and now we pass to the forty-fourth recommendation, which advises "that institutions be formed to educate and qualify females to be nurses of the sick."

Here comes a tender point; we want a corps of well-educated nurses, and yet we hesitate: thinking "a little learning is a dangerous thing" in medicine, we fear that females trained to the professional care of the sick may wish also to prescribe and thereby interfere with our plans, or assume responsibilities which should rest only on those who are completely educated in the

* Vol. xv. page 419, April 1848.

principles of the healing art. Yet, if they are properly educated, there is no ground for this fear; certainly, if our nurses were systematically trained to their employment, we should rest with more confidence that our prescriptions would be faithfully administered. Few physicians have been long in practice without having occasion to feel how much they and their patients are in the hands of the attendants, who are often ignorant and sometimes officious and meddlesome, and how often their carefully studied plans of treatment are rendered feeble and ineffective for want of discreet and faithful co-operation in those who stood and watched permanently by the bedside.

For other employments, men and women serve an apprenticeship: they devote some months or more to learn the art of dress-making, spinning, straw-braiding, &c.; but ordinarily, no such preparation is required for the care of the sick. Any one whose heart is warm with benevolence, or who has no other occupation, or even who has failed in other pursuits, may set up for a nurse and obtain employment.

If our hospitals would admit women to learn the art of nursing the sick, and, after a proper apprenticeship, send them forth, with certificates of proper qualification, to be employed in the sick chambers of private life, they would do a great good, and aid to supply a want that is now very generally felt, and in some cases very severely.

The forty-fifth recommendation advises "that persons be specially educated in sanitary science, to be preventive as well as curative advisers."

This strikes at the root of the whole matter, and, if adopted and carried out, will have an important influence on the sanitary condition of the people, on the studies of our profession, and on their relation to those who employ them. "They that are whole need not a physician, but they that are sick." This doctrine has been believed by the world, and made the law of all time, from the beginning. The world does not believe it wants, and no class of men prepare themselves to give, preventive advice. There is no demand, and consequently no supply. The sole vocation of the physician is looked upon as curative, as remedial of an evil when it has come, but not as defensive against it. Men are generally willing to seek and to pay for the skill that redeems them from disease and pain, but they have no idea of looking for, or paying a man of science for warning them of, and defending them against, this evil. A prudent man consults his lawyer as to the proper course to be pursued in order to avoid the entanglements of the law, and the risk or loss of property, and pays him liberally for this cautionary advice. But, in regard to sanitary measures, the location of a house, the ventilation of a dwelling, the selection of occupation, diet, habits, or any other thing that may immediately or remotely affect the health or strength of himself, his family, or his neighbourhood, if he consults his physician at all, which, however, is not frequently done, he expects his adviser to give his opinion on the friendly or neighbourly account, and not as a matter of commercial value. And even then this advice is not held in the same estimation, nor considered as worthy of confidence and obedience, as the opinions of the same adviser when consulted in regard to any disease.

As the world is glad to obtain and pay for the wisdom that can remove a fever, but is unwilling to pay for that which keeps the fever away, the natural consequence is, that men, when they prepare themselves to be physicians, seek for that knowledge which will be demanded and bought by those who will employ them. Allowing to the medical profession all due credit for philanthropy, which we claim for them in no small measure, yet a great object of the physician, like that of other men, is to obtain his support by his

calling. He, therefore, instructs himself with that kind of knowledge which the people will purchase. Looking at the market, he gathers for other men's use that commodity which they are willing to seek and pay for, and which is thus convertible into bread for himself and his family. He therefore becomes a curative and not a preventive physician. And until mankind looks differently upon health and disease, and considers that the former is very much in their own hands, and that the latter may be prevented, in a great measure, by proper self-management, and will set a just value on the skill that shall guide them safely from the attacks of disease, it is altogether vain to expect that ours or any other profession will devote the time and labour necessary to be accomplished and successful preventive advisers in sanitary matters.

The forty-sixth recommendation advises "that physicians keep records of cases professionally attended."

We yet need more tangible and definite grounds to determine the events of disease. We have general and conjectural opinions on this point, but we have no accurate data for comparing the mortality of different diseases, or of the same disease in different seasons, or periods, or in different places or classes of society. Some of the British vital statisticians have endeavoured to ascertain, from a few records, the proportion of deaths to the amount of sickness or to the number of attacks of all kinds of disease. But their inferences have no regard to special diseases, and throw no light upon their comparative curability or fatality.

The Massachusetts Medical Society took this matter into consideration in 1843. It was referred to a committee, who made their report the next year. They advised that a universal system of registration of disease be adopted by the members of the Society; that the records of all these physicians be annually gathered; and that the committee of the Society digest all these returns into one system, and print the results in a tabular form, with such suggestions or annotations as may be supplied to them, and distribute the volume, when printed, to the Fellows of the Society. The Society accepted and printed the report, and distributed it to all its members; but no further action was taken upon it; and this plan thus slept the sleep of death. Again it is proposed by this commission, and, we trust, with better results.

We have thus given, at considerable length, the substance of this able and valuable report. After all that has been done by the people and the governments of some countries of Europe, and after all that has been done by individuals and societies in America, this report is the first approach to legislation from any government in this country.

This plan of Mr. Shattuck is an extensive one. It comprehends more than the friends of the measure originally proposed for immediate adoption, and more, we fear, than any of our legislative bodies will see their way clear to adopt at once. The original friends of this measure only asked for a sanitary survey; but they had no doubt that, when this should be undertaken and accomplished, the people would see the advantage of further action, and call upon their legislators to provide successively for all the sanitary measures which are proposed in this report.

As it is, we commend this report, with all its plans and details, its facts and arguments, to the careful consideration of physicians and philanthropists, of political economists and legislators, with the confident belief that the condition of man will be improved, and the interests of humanity advanced, as well as public and private wealth increased, by its adoption.

E. J.

ART. XIV.—*Musée d'Anatomie de la Faculté de Médecine de Strasbourg — Histoire des Polypes du Larynx.* Par C. H. EHRMANN, Professeur à la Faculté de Médecine de Strasbourg, &c. &c. &c. Fol., avec six planches lithographiées: pp. 58. Strasbourg, 1850.

Anatomical Museum of the Faculty of Medicine of Strasburg—History of Polypus of the Larynx. By C. H. EHRMANN, Professor to the Faculty of Medicine of Strasburg, &c. &c. &c. Fol., with six lithographic plates: pp. 58. Strasburg, 1850.

THE author of the book whose title we have copied above was induced to present to the profession this result of his studies in the matter of polypus of the larynx, partly because of the importance of the subject, and partly because his own experience in the treatment of the affection enables him to place it before his brethren in a more favourable light than they have before seen it. In the year 1844, he was called to attend upon a case of polypus of the larynx, in which death was imminent; he opened the trachea and larynx, removed the offending growth, and saved the patient's life. This case was reported to the Academy of Sciences, of Paris, and was pronounced by that learned body to be the first instance in which this operation had been successfully performed in this disease; and Stromeyer, President of the Scientific Congress which assembled at Aix la Chapelle, in 1847, declared that it was one of the most brilliant conquests of modern surgery.

In this essay, M. Ehrmann has collected the reports of all the well-authenticated cases of this affection which he has found recorded, and lays them before the reader, accompanied by drawings illustrative of many of them.

No tabular statement of the phenomena attending the disease in these cases is presented; indeed, the character of the reports hardly admits of a satisfactory exposition of this kind. We will endeavour, however, to analyze the details as well as we may, inasmuch as we think that any reliable information concerning this interesting and obscure affection must be worthy of attention.

The number of cases which M. Ehrmann reports amounts in all to thirty-six. These are collected from various sources: two are from Lieutaud; three from Desault; one from Pelletan; two from Schultze; one from Otto; two from Andral; one from Senn; one from Urner; one from Dupuytren; one from Brauers; one from Rayer; one from Dawosky; one from Trousseau and Belloc; one from Gérardin; one from Mayo; one from Ryland; one from Rendtorff; three from Gluge; one from Nasse; one from Stallard; one from Bertherand; one from Rue; and two which he observed himself: the remaining five occurred in animals, two of them in horses, and three in cows. These cases are reported briefly, but satisfactorily as regards the main points, in most of them.

The prominent symptoms in these instances were, sense of the presence of a foreign body in the larynx, producing cough, alteration in the voice, dyspnœa in paroxysms, and finally complete prevention of the entrance of air, and death. But these symptoms varied considerably in intensity and in their progress.

The mode of invasion differed. In one case (obs. 19) the first symptom was sudden and inexplicable loss of voice, to which was added, at the end of eighteen months, cough, with dyspnœa; death at the expiration of two years. In others, and most commonly, the affection manifested its existence by the occurrence of slight dyspnœa, or trifling change in the sound of the voice, at a period remote from the termination, in one individual two years before death (obs. 31), in another six years (obs. 29). On the other hand, the progress of the affection may be more rapid, as in the instance described in obs. 7; a

boy, six years old, presented symptoms of croup, in the latter part of February; the attack did not pursue its usually rapid course, but became gradually chronic, the child having more or less fever all the time, and his voice being always muffled; towards the beginning of May, he recovered in a measure his strength and flesh, but on the 12th July, about twenty weeks after the first seizure, he was suddenly attacked with suffocative dyspnœa, and died in the paroxysm. At the *autopsy*, a polypus was found seated near the base of the epiglottis cartilage, and closing the chink of the glottis. And in obs. 17 is recorded the history of another boy, ten years old, in whom the cause of formation of the polypus which destroyed his life is ascribed to the prior occurrence of repeated attacks of croup, under which the child suffered from trifling exciting causes. In such instances as these, in which the disease is of an *acute* character, the symptoms may abate from time to time, or they may continually increase in intensity, consisting of a croupy cough, constant or interrupted dyspnœa, with occasional or frequent paroxysms of suffocative orthopnœa, in one of which the sufferer usually dies; or death may be produced by a more gradually induced suffocation. In the more *chronic* cases, the symptoms may be thus enumerated: *feebleness, hoarseness, or other alteration in the tone and character of the voice*, gradually increasing, and amounting at last to aphonia, either persistent or interrupted; *dyspnœa*, varying in degree, but generally steadily augmenting, and in almost every case attended with paroxysmal aggravations, which may be so protracted in their duration as to simulate death (obs. 13), or, as in most of the observations, as actually to prevent restoration; sometimes this dyspnœa is produced during the act of *expiration*, and apparently by it, and is relieved by the *inspiratory* effort (obs. 3, 4, 5 and 8), but the reverse may be the case, or the difficulty of breathing may be equally great in both (obs. 13 and 18); *cough* is always present, but its characters are not particularly significant, being croupy, or simply hoarse, continuous, or in paroxysms, dry or attended with expectoration, appearing at the commencement of the difficulty, or at a later period; *the expectoration* is generally not characteristic of this affection, being usually formed of simple mucus, more rarely of mucus streaked with blood (obs. 8 and 9); the *respiratory sounds* were such as to indicate, generally, the existence of an impediment of some sort to the free passage of the air to and from the lungs; but they were not always the same in different cases; sometimes they resembled the noise of snoring, but more frequently they were merely harsh or stridulous; these sounds may be rendered more audible by the aid of the stethoscope. In several of the observations, there was experienced a *sensation of a foreign body in the larynx*, or of some stiffness and uneasiness in the acts of breathing and swallowing (obs. 8, 9, 12, &c.), but in other cases no such sensation was complained of by the patient, or it was omitted in the reports; rarely was there any tenderness or pain in the larynx.

We have said that, in the cases recorded by M. Ehrmann, the expectoration was not, in general, significative of polypus of the larynx; but in two of them it was so. The eighth observation illustrates this point in a very interesting manner; it is as follows: "A man of sixty-five years of age, but otherwise hearty, had been for several years past troubled with *hoarseness of voice*, which he attributed to a cold, and which gradually rendered him almost aphonic. He coughed but seldom, had no pain in the larynx, but experienced a disagreeable sensation, as of a substance which closed the larynx whenever he swallowed solid food, and when he expectorated mucus. Fearful of being affected with *phthisis laryngea*, he at length consulted a physician. The latter having exhibited to him the most appropriate remedies, both internal and external, the patient expectorated, a few days afterwards, in a paroxysm of

coughing, *a small globular, fleshy, red and solid mass*, of the size of a currant, and two days later *a similar body*, about as large as a small cherry: immediately afterwards, his voice and the facility of breathing were restored. At the expiration of some weeks, the patient expectorated, for the third time, *a fleshy mass* as large as a pea, and furnished with a very *delicate pedicle*. But the roughness of the voice and the dyspnœa soon returned: the latter symptom became so much aggravated that the abdominal muscles grew very painful, in consequence of their powerful contractions in respiration. Sometimes a slight cough occasioned the expulsion of a very viscid matter, tenacious, and at times mixed with blood. The patient's powers gradually sank, and he died of slow suffocation.

Autopsy.—The larynx was almost completely ossified, and the epiglottis cartilage was loaded with an abundance of fat. A *fleshy and nodulated tumour* of large size was found, as it might be, suspended in the glottis, springing by quite slender pedicles, surrounded by fibrous appendages, from the inferior vocal ligament on each side: it was consequently movable, and was formed by the union of three excrescences, each of which was as large as a hazelnut: they were roundish, rough, very firm, elastic, and of a pale red colour. One of them, situated above the glottis, was prevented by its volume from engaging itself in the chink; but the other two, placed below this opening, closed it so completely during the expiratory act, that suffocation must inevitably have followed. Apart from this, the vocal ligaments themselves, the ventricles of Morgagni, and the entire mucous membrane of the larynx were not at all abnormal in their appearance, excepting that here and there were a few red spots, and vessels of small calibre going to the polypi through the pedicles." There is a very good drawing of this larynx among the plates.

The twenty-ninth observation records a similar expulsion, at different times, during violent paroxysms of coughing, of small fragments of tissue similar to that of the tumour which was subsequently removed by the operation practiced upon the patient by M. Ehrmann, and which we shall have occasion to mention again directly. And even if the polypus, or portions of it, should not be actually expectorated, it is still interesting, though not available in a diagnostic point of view, to know that it may, by the violence of the cough, become detached from its connection with the mucous membrane and produce suffocation, as was the case in the twenty-eighth observation: "A woman, aged forty years, entered the hospital in a state of extreme exhaustion: she presented the symptoms of bronchitis, with severe cough and dyspnœa. During three or four days, she seemed to be getting better; but a *paroxysm of coughing* came on suddenly, and she died before any assistance could be offered to her. *Autopsy.*—The lungs were very emphysematous. The ramifications of the bronchial tubes were healthy, but the large trunks were very much congested. In the *trachea* was found *a polypous mass detached;* it was as large as an almond, and had a pedicle nearly three-fourths of an inch long. It was supposed at first that this body came from some point of the *larynx, a part in which this kind of growth most frequently originates;* but, on examining *the trachea*, we discovered upon its anterior wall, at the distance of half an inch below the cricoid cartilage, a reddened and thickened wound, below which the mucous membrane immediately regained its healthy appearance."

The expectoration of such matter as that which was thrown from the larynx in the cases mentioned above, viewed in connection with the alteration in the voice and in the character of the respiration, which has generally preceded such an occurrence, would be almost conclusive evidence as to the existence of polypus of the larynx. Other strong diagnostic testimony to the same effect may occur in the nature of the respiratory sounds, as in obs. 29, in

which the patient was able, by a quick movement of inspiration and expiration, to imitate the noise made by a *valve* opening and closing alternately; or in the assurance on the part of the patient that a foreign body seems to him to be forced by the respiratory acts against the chink of the glottis, and to be the cause of all his sufferings (obs. 15, 29, &c.); or finally, by the surgeon being enabled to feel with his finger introduced far into the patient's throat, a fleshy mass engaged in the rima glottidis, and perhaps projecting upwards from it (obs. 16).

The *size* of the tumours varied in different cases, from that of a pea to that of a pigeon's egg, or even larger. In some instances, they were pediculated, in others sessile upon a broad base.

The diseases upon which this local affection was engrafted, in the instances from which M. Ehrmann's observations were drawn, were, so far as is mentioned, *phthisis pulmonalis*, in four cases; *syphilis*, or what seemed most probably to be such, in three; *chronic disease* of the *urinary passages* in one; *scrofula* in one; in the remaining cases, the individuals were either healthy, or no mention is made of their general condition.

Their *ages* respectively were as follows: Between 1 and 5 years, one; 5 and 10, two; 10 and 20, three; 20 and 40, three; 40 and 60, nine; above 60, three; in the others, the age is not specified.

The *duration* of the complaint is given as twenty weeks in one case, some years in another, eighteen months in a third, several weeks in a fourth; one, two, and three years in as many others; but generally the time ascribed is rather indefinite, as "*a long time*," "*some time*," &c. Indeed, in some of the patients it would have been difficult to fix any reliable date for the commencement of this laryngeal affection, because they had for some time previously been the prey of disease of the respiratory organs, which are generally attended with cough, alteration of the voice, and the like symptoms.

As to the *causes* of the morbid condition of the larynx, we can glean but scanty information from the observations recorded, excepting with reference to a few cases. In a child, the subject of the seventh observation, which we have already quoted at length, we are inclined, from the narration of the symptoms, to consider *an attack of croup* as the starting-point and the exciting cause of the modified local nutrition which led to the formation of the polypus. And in the boy whose history is recorded in the seventeenth observation, which we have also adduced in connection with the other, the same cause may be assigned. In the latter case, the child had repeated attacks of croup; very trifling causes, "the slightest chilling, exposure to a current of air, excited invariably a very hoarse cough;" and how far this excessive and unusual sensitiveness of the mucous membrane may itself have depended upon some peculiarity of organization which occasioned both the cough and the development of the polypus, we cannot of course determine. We are told, however, that the patient was of "a delicate and scrofulous constitution," and we know that in such individuals the mucous membranes, particularly of the respiratory organs, perhaps, are very commonly thick, puffy, and very vascular, and, we may infer from such a constitution, prone to hypertrophy, requiring only the inciting action of such a cause as existed in this little individual to develop some local out-growth.

In like manner, we may certainly admit that it is possible that the polypi which grew upon the mucous membrane of the larynx in several others of the cases recorded by M. Ehrmann, may have taken their origin and outstart in a frequently repeated *catarrhal affection* of this membrane; in some of these patients, such a morbid condition is noted as having existed, and in

others their occupations exposed them constantly and inevitably to vicissitudes of the weather, which were well calculated to induce such a vascular turgescence of the laryngeal membrane. But why this particular result should have ensued in this limited number of cases, when thousands of others, possessing similar constitutions, and exposed to like disturbing influences, suffer from repeated attacks of croup and catarrh, and escape without the production of polypus of the larynx, we cannot fathom.

Several of the patients whose histories are recorded by the author, were laboring at the same time under *pulmonary phthisis*. We know that ulcerations of the lining membrane of the larynx, dependent in some measure, at least, upon the direct irritative action of the sputa, as they pass over this surface, are very commonly met with in phthisical subjects, and it certainly would not surprise us if some other modification of nutrition, as, for example, *a polypus*, should be the result of the same cause. But, on referring to the "*Researches*" of Louis, we find no mention of his having seen any such outgrowth in the numerous patients whom he observed, and in the subjects which he examined after death; and we are struck, moreover, with the fact that, in his examinations, the *posterior surface* of the larynx was much more frequently the seat of ulcerations than the anterior; while, on the contrary, in the observations of M. Ehrmann, the polypi were found upon the *anterior* surface of this organ in almost all the cases.

The *syphilitic dyscrasia* may be looked upon as another predisposing cause of the production of polypus of the larynx. M. Ehrmann reports several instances in which this constitutional taint co-existed with the local affection in question. But, in the greater proportion of the cases, there seems to have been no assignable cause for the local phenomenon, and we are left to "float, like Pyrrho, on a sea of speculations," with reference to them.

Pathological Anatomy—Histology.—Under this heading, M. Ehrmann offers some very interesting and instructive observations. He says, "the form and structure of polypous tumours are variable; they are sometimes roundish, sometimes irregularly shaped, united in clusters, granular, lobulated, most frequently pediculated; they occasionally resemble condylomata in appearance. Their attachments, whether broad or slender, single or multiple, are rarely traversed by blood-vessels of any size. They may occupy the whole internal surface of the larynx, but they are attached more commonly about the glottis, particularly to its inferior ligaments; they are more rarely found in the substance of the aryteno-epiglottic ligaments, and in the ventricles of Morgagni. The epiglottis is the favourite seat of those vegetations which are supposed to be syphilitic.

"Polypus of the larynx is constituted sometimes of fibrous or fibro-cellular tissue; and in other cases of all the elements of the mucous membrane united, but modified in character. When the tumour belongs to the first class, it assumes the form of a firm and compact mass, resembling that which exists in the proper fibrous tumours; in this respect, the tissue composing this species of polypus may be compared to that of the ligaments of the glottis, or to that which is found in their immediate vicinity; thus we see the pedicles of these tumours originating in the fibrous appendages, and blending with the fibrous element of the vocal cords, an observation which has been already made by Albers. The tissue composing these tumours is traversed by very minute blood-vessels, and their external investment consists of a thin layer of the mucous membrane modified in its structure." The polypus described in the twenty-second observation was of this nature, as is proved by the description which is given of it when examined by the aid of the microscope—(p. 32).

Of the other variety of polypus, that in which the tumour is composed

chiefly of the *mucous membrane*, the subject of the twenty-ninth observation affords a very good illustration. It was composed chiefly of the epithelium, which was perfectly recognizable by the form and arrangement of its cells. Of this kind of polypus the author thus speaks: "It is probable, then, as the result of these data, that hypertrophy of the mucous membrane involves especially its *epithelial layer*, since it is this which we find in superabundance in the mass which forms this variety of tumour; the *areolar* tissue which is met with in it belongs, as is well known, to the structure of all the mucous membranes; and if some fibrous tissue should occasionally be found at the base of these vegetations, it is as if for the purpose of forming a transition between the true mucous polypus and the fibrous."

M. Ehrmann coincides with the opinions held by Lebert, with reference to mucous polypi. The latter distinguished pathologist thinks that, instead of calling these growths "*polypi*," they should be considered as simple excrescences or *hypertrophies*, either of the epithelium, or of a circumscribed portion of the entire thickness of the mucous membrane, or of only a portion of the sub-mucous cellular tissue. This view of the subject simplifies it very much, and is, we have no doubt, consonant with facts.

The reader will find, by reference to the observations of the author, a great many minor points of interest, which we have not been able to notice in this sketch, because we did not think it expedient to extend our limits.

As to the treatment of polypus of the larynx, M. Ehrmann suggests no other method than that of removing it through an opening made along the middle line of the larynx and trachea, and we doubt very much if it be possible to relieve the patient in any other manner. In one of the cases reported (obs. 15), the surgeon, M. Brauers of Belgium, opened the patient's larynx, and endeavoured to destroy "the excrescences which filled the cavity of the organ," by the applications of the acid nitrate of mercury, and finally of the actual cautery: but, so far from removing them, they increased in volume after each cauterization, and although the patient was still living at the date of the report, his death was confidently expected. We presume that no other result can be anticipated from similar applications which might be made to the interior of the larynx, in such cases, after the method of Dr. Green.

M. Ehrmann reports *five* cases in which the operation was performed upon human patients, and *two* upon animals, a cow and a horse. Of the former series we have just cited one. The second instance was in a patient of Trousseau and Belloc (obs. 18); the man was forty-two years old, and had enjoyed good health, until about eighteen months before the operation was performed, during which time the polypus had been growing. The larynx was opened only when it was evident that the patient would otherwise die speedily of suffocation; some arterial and venous hemorrhage occurred when the incision was made, but this was arrested by slight compression. As soon as the canula was introduced into the opening, the patient's breathing was relieved, and he continued to do well during *the five following days*: but then an attack of gangrenous pleuro-pneumonia came on, of which he died in the course of twenty hours. At the autopsy, "all the left half of the mucous membrane was of a grayish-green colour; the inferior vocal cord was very much swollen, the superior less so; the left ventricle was bathed with an excessively fetid grayish sanies, and occupied by an accidental growth of a lardaceous consistence, and an ash-white colour. This tumour was continued into the space which separates the cricoid cartilage from the posterior part of the thyroid, and appeared a little outside of and behind the larynx. A portion of the thyroid cartilage on the left side was carious. This same tumour projected from the ventricle, when it assumed the consistence and colour of a

mucous polypus, and encroached considerably upon the cavity of the larynx." We will not repeat the post-mortem appearance of the lungs and other organs. In this instance what the termination of the case might have been if the polypus of the interior of the larynx had been recognized and removed, we cannot say.

In the third instance, from Gluge (obs. 26), the larynx was opened, but the patient died soon afterwards. In this case, as in the last, the tumour was not recognized. It was very large indeed, originated on the mucous membrane of the larynx, occupied almost the entire cavity of this organ, and caused a considerable projection externally.

In the fourth case, from Bertherand, of the Strasburg military hospital, (obs. 31,) the patient was a Polish superior officer, sixty years old; his health was good, and he complained only of dyspnœa and a croupy cough, which had gradually increased during two years, and had lately become very severe at times. The operation was performed when the patient was *in extremis*. He did not experience much relief, until some hours after the larynx had been opened and the canula introduced. *The patient died on the ninth day* after the operation, of bronchitis and pneumonia, attended with the formation of small abscesses in the right lung and liver. Moreover, the thyroid body was much enlarged, so that it displaced the pharynx and œsophagus, and it had undergone a cancerous degeneration, as had also the right lung and the liver. But the polypus escaped the notice of the operator during the patient's life, and was only recognized after death; this was the case, as we have seen, in the last three instances, the operation having been undertaken in ignorance of the existence of a polypus, and simply to relieve the symptoms of obstruction.

The fifth patient was operated upon by Mr. Ehrmann himself. We have alluded to this case before (obs. 29). The character of the symptoms admitted of no delay, and their cause seemed to be unmistakeable. The incision was made along the median line of the neck; the crico-thyroid membrane, the cricoid cartilage, and the first two rings of the trachea were divided; very little bleeding followed; a canula was introduced into the opening, and the patient was entirely relieved. M. Ehrmann determined to postpone the conclusion of the operation, until his patient had recovered from the depression and fatigue which she had suffered before it. Accordingly, after forty-eight hours had elapsed, the patient's condition being now very promising, he continued his first incision, *the canula being retained in the wound*, through the thyroid cartilage towards the hyoid bone. The polypus was then removed by excision. The patient did well; on the twenty-first day, the air ceased to pass through the opening, and at the end of a month, having spent a week in the country, she was quite well, and the wound had entirely healed. She was attacked with typhoid fever about seven months afterwards, and died. The larynx was carefully examined; the left inferior vocal ligament, upon which the polypus was seated, presented a few very small granulations upon its surface, and one, rather larger than the rest, was situated at the point of junction of the two inferior vocal ligaments.

In the horse and cow, the operation, performed under similar circumstances to those present in the human patients, was successful.

The author advises that the operation should, if possible, be performed as he practised it in this case, *i. e.*, that the patient should be allowed to rest and recruit after the first part of the operation, and that during the performance of the second part the canula should be left in the windpipe.

We have been exceedingly interested by the perusal of M. Ehrmann's book, and commend it to the attention of the profession.

F. W. S.

BIBLIOGRAPHICAL NOTICES.

ART. XV.—*Elements of Medical Jurisprudence.* By THEODRIC ROMEYN BECK, M. D., LL.D., Prof. Mat. Med. in the Albany Medical College, &c. &c., and JOHN B. BECK, M. D., Prof. Mat. Med. and Med. Jurisp. in the College of Physicians and Surgeons of the City of New York, &c. &c. Tenth edition. Vols. I. and II. Albany, Little & Co. 1851: 8vo. pp. 866—948.

Medical Jurisprudence. By ALFRED S. TAYLOR, F.R.S., &c. &c. Second American, from the Third London edition; with Notes and Additions by R. EGLESFELD GRIFFITH, M.D., &c. Philadelphia, Lea & Blanchard, 1851: 8vo. pp. 670.

We have placed above, the titles of the two best treatises on medical jurisprudence in our language; both of them new editions of standard works, and both of them bearing unmistakeable evidence of the industry, and research, and discrimination of their authors. It would be difficult to enter upon a discussion of their relative merits in the space allotted to us, nor do we feel at all inclined at this late date to say, where each has so much merit, that one is better than the other. We are perfectly satisfied that either one contains an amount of information which will place the reader in full possession of the elements and practical bearings of the science of which it treats.

Since the publication of the previous American edition of Dr. Beck's classical work, medical jurisprudence has made rapid strides in advance; and one of the best proofs of the fact is contained in the introduction to this edition, viz., that the authors found it necessary to add several hundred pages to their last London edition, in 1842, of which this was at first intended to be merely a reprint. The pages of this Journal, for years past, have borne constant evidence of the untiring and *inevitable* research of Dr. T. R. Beck, whose observations and extracts from foreign and domestic sources have filled that portion of it devoted to medical jurisprudence; and the writer of the present notice bears his testimony to the same effect; for, having taken much interest in the subject, and consequently had occasion to examine the journals, he found it almost impossible to furnish a single novelty to this department in which he had not been anticipated by Dr. Beck. It is almost unnecessary to say that the materials collected by Drs. Beck have been skilfully used, and have been arranged in such a form as to make their work worthy of the period at which it is published.

In one respect we are inclined to be at the same time pleased and fault-finding, and this is in the typography and getting up of these volumes. While the clear type, white paper, and large spaces and margin make them readable, they are too bulky for every day use, a fault in which our publishers are beginning to emulate those of former times, giving us, instead of folios and quartos, royal octavos quite as cumbersome and unhandy. This, however, is a fault of the dress, not of the matter.

Mr. Taylor's work has passed through three editions in Great Britain, and a second one has been called for by the demands of this country; a portion of it, that on poisons, having been previously reprinted from the author's separate work upon that subject.

In each successive edition, Mr. T. has brought down to the period at which they were written, the facts of the science, and the decisions upon the interesting questions involved in medico-legal investigations, corrected by more enlarged experience and matured judgment; and in the volume before us has presented an admirable and well-arranged treatise, in which both the physician and lawyer can find abundant information upon the subjects discussed, well digested, succinctly and clearly stated, and—as justly said by the late and lamented American editor—"of an eminently practical character." It is an

excellent text-book, and yet takes a much higher range than such books generally do.

We cannot close this notice without a brief allusion to the loss which science has met with in the somewhat recent death of the American editor, Dr. Griffith. He was too well known in this community to require a eulogy at our hands, for the greater part of his life was passed here, and the evidences of his laborious habits are to be found in the interesting papers contributed to this Journal and the able works he has published—in the professorial chairs which he filled both here and elsewhere—and in the valuable contributions he has made to various departments of natural history; for in many of these, as botany, conchology, and mineralogy, he was surpassed in acquirements by few. He was exceedingly industrious in his habits, untiring in his zeal for knowledge, remarkably retentive in his memory, reading everything and stowing away for future use, and yet not selfishly gloating over the treasures he had discovered. Such a course would have ill suited one of his cheerful and animated disposition. He loved society both for the instruction and pleasure he derived from social intercourse, and because it gave him an opportunity to impart to others the knowledge he had himself acquired, and which he felt constrained to scatter about him as an outpouring of his own good heart for the benefit of others. He has left behind him the enviable reputation of having contributed to the extent of his ability—and that no mean one—to the cause of science; and we can only regret that his labours are ended at a time when she might have reaped from them still larger benefit. C. R. K.

ART. XVI.—*A History of the Disease usually called Typhoid Fever, as it has appeared in Georgetown and its Vicinity; with some Reflections as to its Causes and Nature.* By W. L. SUTTON, M. D., Georgetown, Ky., Maxwell & Co., Louisville, 1850: 8vo. pp. 127.

DR. SUTTON has presented, evidently with great candour, the result of his personal observations upon the particular form of disease which appeared in Georgetown and its vicinity, during the last six years, and believed by him to be identical with the typhoid fever of Louis. Even by those who shall reject as erroneous the remarks of the author in relation to the true character of the disease of which he treats and of typhoid fever generally, the work before us must be considered as one particularly interesting, inasmuch as, admitting his diagnosis to be correct, he has shown very conclusively that enteric fever may occur, in the form of an extensive endemic, unattended by some, at least, of what have been considered its characteristic symptoms.

It is to be regretted that Dr. Sutton was able to make an examination after death in only three of the fatal cases which occurred during the period over which his observations extend. In each of these cases disease and ulceration of the intestinal glands were present. In the first case:—

"The small intestines were red internally throughout their course; near the ilio-cæcal valve they were more highly coloured externally, and internally presented elliptical plates distinctly elevated, and some of them ulcerated in numerous distinct minute points: solitary glands distinctly thickened, and some of them ulcerated; the mucous membrane considerably injected, having veins, distended with dark blood, interspersed."

The liver was "apparently healthy;" spleen not examined.

In the second case, the liver, also, showed no indications of disease; but the spleen was enlarged, almost globular in shape, very red, "and much softened; breaking down under the handling." In the lower portion of the ileum, "several elliptical patches and solitary glands were found slightly ulcerated, without apparent thickening or diminution of the walls."

In the third case:—

"The stomach was moderately distended with air and a little fluid; externally and internally healthy, if we except a small spot just below the central depression, which exhibited a group of innumerable minute red specks, as if

the point of a fine needle had been repeatedly applied. The small intestines in various places appeared diminished in volume, otherwise sound until we approached the lower end of the ileum, where externally it was dark and contracted. Upon laying it open, a number of ulcers were to be seen, varying in size, some not larger than a grain of wheat, others larger than a twenty-five cent piece. They extended to the peritoneal coat. In some of the smaller ulcers, the edges were thickened; in the larger, there was no thickening of the edges. The intermediate spaces were filled with enlarged veins containing dark blood. Near the ilio-cœcal valve there were some large, very irregularly shaped ulcerations. In the cœcum and upper part of the colon, were similar ulcers, also near the anus. The colon externally was of a healthy colour, but very much diminished in calibre; internally, throughout as dark as a mucous membrane could well be. The rectum in the same condition. Some of the mesenteric glands enlarged. There was very little blood in the vena cava or any of the large veins. Indeed, there appeared to be a very considerable scarcity of blood in the cutaneous veins and those in the cavity of the body. Liver and pancreas healthy. Spleen enlarged and softened."

Dr. Sutton presents a very full history of the disease, as observed by him, from its onset until its termination in convalescence or death. From his remarks on its diagnosis, we extract the following list of symptoms, which are considered by him as those of most importance, presuming that the patient is seen during the first week.

"A tongue whitish, moist, or beginning to become clammy, with red papillæ showing through the white coat, and reddish edges and tips, giddiness, and tinnitus aurium upon rising; more or less uneasiness of the head; tenderness at the epigastrium or right iliac fossa; tympanitic state of the abdomen; diarrhœa, the dejections of a dirty yellowish colour, very liquid and very offensive, of a cadaverous odour, with or without griping; great muscular debility; a pulse increased in frequency, increased or diminished in volume and strength; occasionally a cadaverous smell of the body."

Although, Dr. S. remarks, we may have a case of typhoid fever in which a majority of the above symptoms are absent, or a majority of the symptoms without the fever, yet when "we have something like the assemblage just enumerated, we should be on the look-out for the disease."

The cadaveric smell of the body, Dr. S. has observed in many patients ill of typhoid fever; in others he has not detected it; he has also observed it in patients labouring under various other diseases.

In the disease described by our author, the rose-coloured spots upon the skin were not observed. "I have," he remarks, "examined patients daily, during the whole course of the disease, without finding a single spot. I will add, too, that I have not confined my examinations to a few patients or to a short period. It is my custom to examine all whites."

Of his medical friends of whom he made inquiry upon this point, one only had seen the eruption; it occurred in about one-half of the cases in his practice. In one instance Dr. S. saw them, in a relapse of the disease brought on by indiscretion in eating, they continued for only four days. They were absent in the primary attack.

Dr. S. has found sudamina to occur rather frequently; in perhaps a third of the cases.

It is successive in its eruption, and goes off by leaving very thin scales. "I have seen," he adds, "this eruption continued for several weeks after restoration to health, but most commonly it disappears about the time when convalescence is well established. I have seen one case, at least, in which it did not appear until the patient was in *articulo mortis;* at least, I examined for it in the afternoon without finding it; but at midnight I found the patient dying, with a plentiful eruption upon the neck and lower part of his face."

"Desquamation of the cuticle has been observed something more frequently than sudamina. The scales of this desquamation are too large to have been occasioned by the debris of the sudamina. Its most frequent seat is the chest and back, especially about the loins and sacrum."

Thoracic symptoms of a grave character Dr. S. has rarely observed. He has

frequently seen a short, dry cough—"such as is usually denominated stomach or worm cough. Occasionally, there has been a slight rhonchus in respiration. Towards the termination of fatal cases, the respiration becomes more irregular, and sometimes hurried. The irregularity is often more marked in a sudden expiration than in anything else."

Of 43 cases of the disease, 26 occurred in persons between 15 and 30 years; nine in these over 30; and eight under 15. The proportion of whites to blacks was, in the bounds of Dr. S.'s observations, about 108 to 100. Twenty-seven out of 43 cases occurred in males, and 16 in females. Eleven of the cases terminated fatally, and 32 in recovery.

Of 192 cases, there occurred in

Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.
3	12	16	8	26	21	21	25	26	17	8	9

Total.	Winter.	Spring.	Summer.	Autumn.
	31	55	72	34

Of these there were males 104. Females 88. Whites 118. Blacks 74.

Forty of the above patients were 40 years old and upwards.

Residents of Georgetown appear to have been equally liable to the disease as were young persons recently arrived there from the country. The population of the town is, however, we are told, stationary to a very great degree. The principal ingress being from students to the schools, male and female, and journeymen mechanics.

"We have," remarks Dr. S., "about two hundred students from a distance. Among these I have not known of more than eight or ten cases of fever in the six years; and I do not know that any one of them had been there less than a year. Neither do I know, with the exception of four, that any case was one of typhoid fever. I presume, however, that some of them were."

Insalubrious dwellings and localities appeared to have been the most common places for the occurrence of the fever; it was not, however, confined to these. In a considerable proportion of cases, the attack of the disease appeared to Dr. S. to have been brought on by an undue exposure to cold.

Dr. S. does not believe that the disease originated in or was propagated by contagion.

"A contagious disease," he remarks, "whose infection may remain dormant in the system for seven months" (the allusions are to facts detailed in the work before us), "or may be quickened into life in as many hours; which may appear in half a dozen members of a family, in as many days, without any chance of introduction from without, and then spread no farther in that family or neighbourhood; which can originate in divers families in the same village or neighbourhood—these families having no communication with each other; which can originate frequently at divers points in the country, and infect but one or a few persons—which, in one word, shall frequently set at naught all the laws of contagion as usually understood, although it may, at times, seem to obey these laws, is a contagious disease which I do not profess to understand. Neither does it seem to me that anything is gained in etiology by calling in the aid of such an agent."

As ordinary sequelæ to the fever described by him, the author enumerates phthisis, in several instances; œdema of the face and limbs; loss of the hair, desquamation of the cuticle; in one case, a very painful affection of the tibia, accompanied by some tumefaction of the integuments, which were, also, exceedingly tender to the touch. In another case, a very painful swelling of the leg, the limb remaining permanently enlarged after the disappearance of the pain.

The disease, as observed by Dr. S., pursued, in general, a protracted course. In two cases, death occurred on the sixth day, from the presumed date of the attack. These, he thinks, were the shortest courses of the fatal cases that have occurred under his notice. In one case, complete convalescence was established on the eighth day. From two to three weeks, Dr. S. lays down as the average duration of the fever. In one case, it continued, however, for six weeks, and in another the patient was confined for twelve weeks or upwards.

"In general," he states, "there is a very gradual aggravation of symptoms for six or eight days; then there are from four to eight days, during which no appreciable change takes place. Then there is a very gradual amendment for five or six days more, and then a more rapid improvement."

It would seem that the severity of the attack had very little to do with its duration.

The following quotation is from the author's section which treats of the prognosis of the disease:—

"Great frequency of pulse, long continued, profuse diarrhœa, quick respiration, especially if performed irregularly; dry, black tongue, profuse hemorrhage at the latter stages of the disease; subsultus tendinum; low muttering delirium; loud raving, great prostration, discharges of flatus, strangury, suppression of urine, restlessness, and an impression of being well when very grave symptoms are present, are among the symptoms indicating great danger. If I were to select three symptoms indicating much peril, I would take a frequent weak pulse, profuse and continued diarrhœa, and a dry black tongue. Whatever other symptoms may be present, I hold that a combination of these is of evil import. I do not now remember a case of doubtful aspect in which one or more of these symptoms were not present, and the converse is true: I do not remember a case in which the three were united which was not a grave case. As one or more of these three, united with other symptoms enumerated as indicating danger, are present, so will the danger of the case be.

"We must remember, however, that there is no disease in which there is more reason to hope against hope. Thus, in a case in which there had been continued diarrhœa, with quick pulse, and great muscular prostration, profuse epistaxis came on in the last stage, and death seemed to be averted only by plugging the nostrils. Yet recovery was at last rapidly effected. It may be proper to notice a case which I saw in 1849. A young gentleman had been very low for more than a week. Among the grave symptoms was free hemorrhage from the bowels. After one of these discharges, he sank very much, his pulse became very frequent, and too weak to be counted, and it seemed as if death must speedily ensue. He seemed at least as low, if not lower than the last patient. Yet he recovered, notwithstanding the continuance of hemorrhage from the bowels for twelve or fifteen hours after. Again, in a case of extreme prostration, profuse diarrhœa, delirium, and where, in truth, the patient was abandoned by his physician, the pulse remaining tolerably steady, recovery took place.

"Thus it is that, in all cases, we must lean to the side of hope. On the other hand, we must not forget that there is another side to the picture. In a few cases in which the disease has apparently been mild, when in fact no very grave symptom has shown itself, when the convalescence is considered as already set in, a perforation of the bowel may take place, and death speedily close the scene. I have seen a case in which, for four weeks, the pulse ranged from 60 to 80, the bowels never much troubled, the tongue nearly natural, no undue heat of skin, indeed no bad symptom occurred, if we except a moderate but obstinate pain in the occiput. During all this time, the patient sat up more or less every day, generally in a room adjoining his bedroom, yet, at the expiration of this time, he began to become deaf, his pulse slowly increased in frequency, his tongue became gradually coated and dry, presently delirium set in, and during the sixth week he died.

"Again, a case may be severe, but improvement may appear to have commenced and continued for two or three days, when an aggravation of symptoms may take place, and the patient steadily grow worse, until a fatal termination ensues. This aggravation may occur without any cause apparent to the physician or nurse. It is frequently charged upon improper indulgence. If this last has been the cause, we may hope, by diligence and attention, to remedy the evil, but if it is not, the prospect is truly gloomy, as I do not remember a case of recovery from this state.

"I have found profuse hemorrhage, in the last stage, much less fatal than I was prepared to expect from reading or reflection. I remembered but ten cases in which it occurred. In two only did death follow. In two cases where I

was satisfied a perforation of the bowel had taken place, and when the patient evidently was to live but a few hours, each was impressed firmly with the idea that nothing was the matter. I have found strangury and suppression of urine both to be symptoms of evil import. The patient from whom it was necessary to draw the urine daily for six weeks was the only case of recovery in which either symptom was discovered.

"The case mentioned, in which a general rigidity of the muscles occurred, recovered. I ought, perhaps, to state that there was no permanent rigidity, but it came on when the body was to be moved. It continued to recur for thirty-six or forty-eight hours."

Thus far, our analysis of Dr. Sutton's work has been confined exclusively to the personal observations of the author. We come next to his view in reference to the character of the particular form of disease described by him, and of the nature of typhoid fever in general.

In regard to the supposed specific character of typhoid fever, and its entire distinction from typhus fever, our author calls in question the validity of the evidence upon which these opinions are based.

"If this subject could be settled," he remarks, "by the authority of a very considerable number of highly eminent men, it might be now considered as put to rest. But whilst expressing my unfeigned and very high respect for, and confidence in, these gentlemen, I am not yet prepared to consider the matter as placed beyond controversy. They prove, conclusively, that, according to their observations, a certain train of symptoms has almost always (always, if you please) been followed by ulceration of Peyer's plates; that after another train of symptoms, those plates have never been found ulcerated. Hence, they conclude that these two trains of symptoms denote two diseases specifically different. They may be right, but are they necessarily so? According to my observation, and that of physicians immediately in this vicinity, the rose spot does not appear as a symptom of typhoid fever. Am I to set this against the observation of the profession, and conclude that this eruption is not characteristic of the fever? Assuredly not. But the symptoms of typhoid and typhus fever do not differ more than those which attend different epidemics of bilious fever. For example, we may have, in one summer, an eruption of red pimples or blotches, great nausea and vomiting, and bilious diarrhœa to attend it. Perhaps the next summer, it will be without either, and obstinate costiveness be present. Yet we hold the two years to have produced the same disease, very much modified, it is true, in appearances. Again, is there more difference between the symptoms of typhus and typhoid fever than between those of the ordinary intermittent, and aggravated forms of bilious fever, of the remittent and congestive types? Yet we consider them essentially the same disease.

"Dr. Power informs us that the vessel Rio Grande brought (to Baltimore) seventy cases of *typhus*, and that four of the seamen and several steerage passengers had *typhoid* fever. Professor Drake found, among the emigrants at Gross Island, patients with typhus and typhoid fever, *i. e.*, those with rose spots and those with petechiæ. These are rather equivocal evidences of the non-identity of the two diseases, yet certainly not proving their identity. But we find others as well situated to observe, and as well qualified to judge, view the matter in a light very different."

Dr. S. quotes the account given by M. Landouzy (*Archives Générales*, Jan. et Feb. 1842) of an epidemic fever which prevailed at Rheims in 1839–40, which, if it were possible to identify a disease by symptoms, was unquestionably one of *typhus fever;* but, in the examinations made in six fatal cases of this epidemic, "the intestinal lesions characteristic of typhoid fever were present." In reference to this fact, Dr. Bartlett queries whether, under certain circumstances, the cause of both typhus and typhoid fever may not be so commingled as to give rise to a mixed disease, in which there is a combination of the elements of both. Professor Wood also suggests the occurrence of this occasional amalgamation of the two diseases.

"Gerhard acknowledges to have met with six cases of true typhus in which the intestinal lesion resembled dothinenterite, and admits that the follicular ulceration occurs in the British epidemic, which he regards as true typhus (*'Dickson's Practice,'* 412)."

"With regard to the amalgamation of specific diseases," Dr. S. observes, "thus suggested by Profs. Wood and Bartlett, it would certainly ill become me to deny the possibility; but, inasmuch as the explanation seems to me to be gratuitous, and, so far as I know, unsupported by analogy, but rather contradicted by it, I think it ought to be entertained with caution and hesitation. Under such admissions by Bartlett, Wood, and Gerhard, I do not know that it would be too much to say, in the words of *Gaultier de Claubry*, that there are no means of distinguishing typhus from typhoid fever, in relation either to lesions or the symptoms of the two diseases. Again, 'the identity of the two diseases is henceforth put beyond a doubt.'—*Bartlett*, 302."

Dr. S. urges the fact that the rose-coloured spots are absent in many cases of the so-called typhoid fever—in five out of fifty-four cases observed by Louis; in one-tenth of the cases, according to Bartlett; in about one-fourth of the seventy cases referred to by Chomel and Genest; and in all of the cases which fell under the notice of himself. Is, then, he asks, this eruption to be considered an essential symptom?

"Is it true that any eruptive fever ever prevailed in which one-fourth or even one-tenth of all those affected failed to exhibit the eruption? Or is there any instance in which an eruptive fever prevailed for six years in any one location, without the eruption being observed, though diligently sought for?"

The space of time during which this eruption makes its first appearance, Dr. S. thinks rather too long for a specific eruption—that is, if we are to reason on this disease from analogy. Its appearance is said to occur from the sixth to the twenty-fourth or thirty-fifth day. I do not, Dr. S. remarks, know of any exanthem in which so much latitude in the period of eruption is allowed, there being nothing to interfere with its regular development.

Dr. S. insists that, as the eruptions, rose spots, and petechiæ are considered as of much importance in distinguishing typhoid from typhus fever, they ought themselves to be distinguishable; and yet three out of six cases investigated by Dr. Shattuck exhibited both eruptions. According to Dr. Stewart (*Bartlett*, 294) in the more severe cases of typhoid fever, the eruption "may exhibit, during the period of increase, four different states, being florid, dark, livid, and petechial. When the hue of the eruption is florid, it disappears readily under the finger; when dark, it still disappears, but more slowly; when livid, semi-petechial or pseudo-petechial, as it has been called, it is only partially effaced; and when petechial, it is not at all affected by pressure. In many cases, it remains florid throughout; in others, it presents one or more, and in not a few, all these alterations."

This change, from rose spot to petechia, was also observed by Prof. Drake, at Gross Island, and by Dr. Upham, at Deer Island Hospital.

"Respecting this eruption," says Dr. S. "there is another point not altogether unworthy of consideration. Prof. Bartlett refers, p. 108, to several cases in which this rose-coloured eruption appeared during a relapse after an attack of this fever; and a similar case is noticed in this essay. This, it seems to me, is proving too much. I do not know that the eruption peculiar to small-pox, measles, or any other exanthem has been observed to reappear after having disappeared in the regular course of the disease. If my notion on this point is correct, reasoning from analogy, we should not expect the eruption of typhoid fever to reappear, considering it an eruptive disease. If, then, the eruption in the second instance is accidental, not proper to the disease, the same eruption appearing in the first instance, may be accidental, not essential to the disease, but dependent on intestinal irritation." Again, he remarks, "Is it unfair to doubt the distinction between the rose spot and petechia? If the same identical spot is a rose spot one day, a petechial the second, and a rose spot again on the third, it does seem to me that distinguishing them apart is alike impossible and useless. Hence we must not be surprised, nay, we may expect, that the rose spot and petechia shall eventually turn out to be the same eruption under different modifications."

It is the peculiar intestinal affection, the inflammation and ulceration of Peyer's patches, which Dr. S. thinks those who place typhoid fever among the exanthems ought to consider the characteristic eruption. It is held, he re-

marks, to be characteristic of the disease—essential to it—that it is found in no other acute disease, if in any at all. Our author adduces facts which, in his opinion, render the doctrine that the presence of the intestinal disease referred to is the characteristic mark of a specific fever, extremely doubtful. The first class of facts are founded upon the statements of Lombard of Geneva, Shattuck of Boston, Fouquier, and Prosper Dor, that they have observed cases which, during the lifetime of the patient, presented the characteristic symptoms of typhoid fever, but in which, after death, no disease of the elliptical plates of Peyer was discoverable. The second class of facts are founded upon a series of observations, showing that the intestinal disease, supposed to be peculiar to and characteristic of typhoid fever, is met with in various other and very dissimilar affections. Thus, Broussais found it in a case of intermittent fever, changed into continued fever.

It may be objected, Dr. S. observes, that in this and some other examples cited in his essay, the ulcerations are not those peculiar to typhoid fever. Bartlett states, after Chomel, "that one of the most constant and uniform characteristics of secondary lesions, consisting generally of specific inflammations, is the fact of their being *disseminated;* of their occupying numerous and circumscribed spots in the tissues and organs of the system." "Now, in every respect, the intestinal lesion of typhoid fever corresponds to this class of pathological alterations. It is disseminated, occupying the same glandular tissue at different points of the intestinal mucous surface." It is true he does not assert that the ulcerations are confined to the glandular structure and the mucous membrane covering it; but such is clearly the impression conveyed by the language.

"That such is not always the fact, I have evidence," says Dr. S., "to me conclusive. In Sylla, the autopsy of whom is given in this essay, many of Peyer's patches, and of the solitary glands, were ulcerated, and, for aught I know, the ulcerations may have been confined to the bounds of the glands; but at the lower end of the ileum there were several very irregular ulcerations, one of which was two inches long by one and three-quarters wide; a tongue of membrane not ulcerated, running up the broad end of the ulcer about half an inch wide and three-quarters long. In the cœcum and colon were similar irregular ulcerations. I hold that these ulcerations were not situated in Peyer's plates at all, because the form and proportions were not such as to admit that interpretation. Or, if they were so situated, the contiguous membrane must have been involved. I had the pleasure of showing the casts of some of these ulcerated portions of intestine to Prof. Bartlett, who recognized them as examples of the lesions of typhoid fever."

Dr. S. adduces from Horner (*Path. Anat.* 307) an example of ulceration of the jejunum and ileum in a patient dead of pulmonary phthisis; also the statement made in Wistar's Anatomy by Pancoast, that the intestinal glands are frequently the seat of lesion in phthisis as well as in typhoid fever—no attempt to discriminate between them being made; and a case of phthisis which fell under his own notice, in which thickening, increased coloration of the patches of Peyer, and of the solitary glands of the ileum, were detected after death. Dr. S. also refers to the fact that Mackintosh detected ulceration of the ileum and colon in fatal cases of infantile remittent fever—that the same ulceration is common after death from small-pox—that it is met with in those who die of painter's colic—in children who die during dentition, and a number of cases, including one of dysentery, recorded by Abercrombie in his work on the stomach. Of these last, Dr. S. remarks:—

"Here, we have a lot of cases, some of which, by symptoms and appearances on dissection, were pretty certainly cases of what would now be called typhoid fever; some in which the symptoms would seem to indicate that to have been the disease, but the dissections did not show the peculiar lesions of typhoid fever, but either a corresponding lesion situated in the colon or an analogous one situated in the ileum. The last is considered dysentery by the author, but it seems doubtful if it was not truly one of typhoid fever. At any rate, the appearances on dissection were analogous to those having a striking resemblance to typhoid fever."

"But it may be urged against many of the cases adduced that they are not

described with sufficient minuteness to enable us to form a proper opinion as to their value. That English writers do not discriminate between typhus and typhoid fevers. That many cases which have been described as infantile remittent fever; and even cholera infantum, were in truth typhoid fever. In one word, that things identical have been considered as altogether dissimilar. To prevent, on the one hand, confounding things which are really different, and, on the other, separating those which are alike, is many times a work of great difficulty. Such is the matter now in controversy.

"Let us recapitulate this section somewhat. I have declared that the typhoid eruption, the rose spots, though diligently sought for, had not been found in this vicinity. I have exhibited proof that, in some considerable proportion of cases, say from one-tenth to one-fourth, it is admitted to be absent. That in some cases, whether of typhoid or typhus fever it matters not, both these and petechiæ appear upon the same patient. That in some cases they are convertible into each other, running from rose spots to petechiæ, and *vice versâ*. That the lesions of the elliptical plates have not been found where, from the symptoms, we have a right to expect them. That these lesions have nevertheless been found where we had no right to expect them. That in other cases we have found analogous lesions in the ileum, and corresponding lesions situated in the colon.

"It may be argued that the case quoted from Broussais was one of genuine typhoid fever, occurring after one of intermittent fever; or that it was typhoid fever from the beginning. The history of the case, as given, does not seem to warrant that conclusion. Still the author may have had his attention so fixed upon some features of the case, as to prevent his seeing others important to the proper understanding of it.

"In the cases from Horner, there is evidently no suspicion entertained by the author, that anything of what is usually called fever affected the patients. Matthew's case, given before, I considered one of pure consumption, and there was nothing to change my opinion; and I have the satisfaction of having a confirmation of this opinion in the judgment of Dr. Bartlett. Perhaps it would not be uncharitable to suppose that some of the cases reported as infantile remittent, or even as cholera infantum, were in truth those of typhoid fever, as I cannot conceive that it would be difficult to confound them; but I should suppose that painter's colic ought not to be so confounded.

"Upon a careful examination of the whole ground, shall we conclude that the lesions of Peyer's plates are invariable and characteristic of typhoid fever—that they are to be found in no other disease? Truly, I cannot bring myself to do so. Shall we conclude that they do not indicate a distinct form of disease, or even a distinct disease? I am not prepared for that either. Shall we say that they are an accidental symptom which may occur in many different diseases, and even exist independent of other symptoms? It behooves us to be cautious in this matter. In our profession, we have had a sufficiency of hasty conclusions, drawn from insufficient observations, which have been replaced by other conclusions drawn from facts equally unsatisfactory. I hope we shall leave this matter under investigation, until we shall have accumulated facts sufficient to enable us to come to conclusions which shall remain permanent."

Such, in brief outline, are the objections advanced by Dr. S. to the validity of the views entertained by many of the leading physicians of Europe and America as to the distinct and specific character of typhoid fever. They are presented with the utmost candour, and evidently in good faith, from a strong conviction of their weight, if not their conclusive character. Some of them are deserving of a serious consideration, while others appear to us rather specious than real.

Of the actual existence of typhoid fever, as described by Louis, Chomel, and others, connected with, and perhaps dependent upon follicular inflammation of the intestines, there can be no possible doubt; the difference which exists between its pathological nature and characters, and those of ordinary typhus, is, in our opinion, still an open question. If typhus fever depends essentially upon a certain morbid condition of the blood, as is probably the case, then we can readily understand how typhus and typhoid fevers may co-exist in the same individual with a combination of the characteristic symptoms of both.

We have never seen a well-marked case of typhoid fever that has proved fatal, in which, when an examination after death has been made, the peculiar intestinal lesions were absent, though we have, in a few instances, detected them in cases of well-marked typhus fever, occurring in immigrants, landed with the disease upon them from on board of infected vessels, as well as in cases among the same class of persons, in which, during life, the distinctive symptoms of typhoid and typhus fevers were so completely blended as to render it doubtful to which of these forms of disease they properly belonged.

The same condition of the patches of Peyer, and of the solitary glands so generally observed in fatal cases of typhoid fever, is unquestionably observed in patients who have died of other diseases. It is almost invariably met with in children who have died of what has been termed infantile intermittent fever; but this affection, from a careful analysis of its symptoms from its onset to its close—taken in connection with the lesions discovered after death—I am well convinced, is the same disease as the typhoid fever of the adult, modified, and that very slightly, by the age of the patients. The same lesions are invariably present also in infants, who have perished from genuine cholera infantum; and even here, the disease bears, in many of its features, so close a resemblance to typhoid fever as to lead to a suspicion that it is closely allied, if not identical, with it. Acute or chronic inflammation of the Peyerian patches terminating in ulceration, is, however, one of the most common lesions discovered in infants that die during the period of suckling, and in cases where, during life, there could be no suspicion of the presence of typhoid fever. In the adult, also, if we are to depend upon the apparently candid and careful statements made by observers of respectability, the same lesions have been discovered after diseases having nothing in common with typhoid or typhus fever.

Our own observations have convinced us that the typhoid is a distinct disease from typhus fever. This conviction has resulted from a consideration as well of the well-marked distinctive symptoms by which it is attended throughout its progress, whether towards convalescence or a fatal termination, and the lesions discovered after death, as of the peculiar circumstances under which the disease ordinarily occurs, so very different from those productive of genuine typhus fever. Our diagnosis has been made up from the whole of the symptoms present in each case, without reference to the occasional absence of a single symptom, or to the occasional presence of those not usually met with in the disease.

While such, however, are our convictions, we feel no disposition to turn a deaf ear to whatever objections to them may be candidly presented. Our aim is truth, and in pathology, truth can only be attained by the accumulation of careful observations, and the utmost freedom of discussion in reference to the accuracy of these observations, and the validity of the deductions drawn from them. We ask, therefore, for the work of Dr. Sutton a careful perusal; let the views advanced by him be cautiously weighed, and adopted or rejected as they shall be found valid or invalid. D. F. C.

ART. XVII.—*Illustrations of Syphilitic Disease.* By PHILIP RICORD, D. M. P., Surgeon to the Venereal Hospital (Hôpital du midi), Paris, &c. &c. Translated from the French by THOMAS F. BETTON, M. D., M. A. N. S., Fellow of the College of Physicians of Philadelphia, &c. *With the addition of a History of Syphilis, and a complete Bibliography and Formulary of Remedies, collated and arranged* by PAUL B. GODDARD, M. D.; with fifty large quarto plates, comprising 117 beautifully coloured Illustrations. Philadelphia, A. Hart, late Carey and Hart, 1851.

Good clinical reports are much more available and instructive to a practicing surgeon than formal treatises, just as the study of the classic marbles of ancient and modern art is more beneficial to the sculptor than libraries of critiques on the correct and beautiful; and the more faithful the transcript of

nature in either case, the more valuable is it to the student. In this view, we cannot but place a very high estimation upon the "*Clinique Iconographique de l'Hôpital des Vénériens,*" of which the volume before us is a translation. In it, M. Ricord has recorded the experience of his hospital; and when the author's acuteness and accuracy of observation are considered, together with the vast field which is afforded for their display in the wards of that institution, the value of the book must be admitted. It contains, moreover, drawings from nature, executed by the best artists, which are as faithful representations of the cases presented to the inspection of his clinical pupils as could be provided, and indeed every one will confess, we are sure, the beauty and fidelity of the illustrations.

The views of M. Ricord are so well known, that we design, in this notice, simply to inform our readers as to the arrangement and the merits of this particular edition of his book.

The *primary symptom of syphilis—the chancre*—is first illustrated by reports of cases and by drawings. It is exhibited in a variety of situations, on the penis, in the urethra and bladder, on the neck of the uterus, in the vagina, at the anus, on the breast, on the groin. Its varying characters, too, are commented upon, and the conditions of these modifications relating to peculiarity of the tissue affected, to the general condition of the system, or the vascular state of the seat of the ulcer. These varieties are the healthy, the indurated, the phagedænic, the diphtheritic, &c. Many experiments are detailed to show the effect of inoculation with the matter secreted by a chancre, and which establish the fact that *such matter*, whether taken from a chancre on the external genitals, the urethra, the neck of the uterus, the bladder, the anus, the breast, or the mouth, or from a chancrous bubo, or from any other source, will, if properly inoculated, always produce a *chancre*, and that this result will not follow inoculation with simple pus or muco-purulent matter, such as is formed in *blennorrhagia*. The leading points of this interesting and exceedingly important matter are expressed in a brief review by M. Ricord of the report presented to the Academy with reference to this subject (pp. 144—154)—a report founded upon some cases which were submitted to the Academy by M. Ricord. We need scarcely add that our certain information upon this subject is due to the investigations of M. Ricord himself.

The volume contains several beautiful representations of vegetations sprouting from the urethra, from the surface of the glans, from the labia of the female, and from the anus. In some instances, these appeared to have arisen independently of any local specific cause; sometimes to have resulted from the irritation of a venereal agent.

The *constitutional* contamination from syphilis is illustrated under the divisions of *secondary* and *tertiary symptoms*. This distinction is based upon the phenomena attending the progress of the disease—certain tissues, as the skin and the mucous membranes, being invaded before certain others, as the fibrous tissues and the bones.

The *secondary symptoms* are presented to us in the form of mucous papulæ of the vagina, anus, and mouth; of the varieties of cutaneous eruptions, of iritis, &c. And the *tertiary symptoms* are described as "gummy tumours," (circumscribed indurations of the areolar tissue, which sometimes disappear under treatment, but more frequently, perhaps, suppurate;) sarcocele, ulcerations about the fauces, inflammation of the periosteum and of the bones, caco-plastic degeneration of, or deposits in, the muscular and osseous structures, caries and necrosis.

We have also read with great interest the details of several cases descriptive of the history of this horrid disease from the formation of the primary ulcer to the death of the patient, and including the result of the *post-mortem* examinations. In this world, at any rate, lust is oftentimes its own avenger.

> "Magne pater divum! sævos punire tyrannos,
> Haud aliâ ratione velis, quum dira libido
> Moverit ingenium, ferventi tincta veneno."

Throughout the volume, we observe that the author digresses from time to time, from the report of a particular case, to generalize and to advance propo-

sitions with regard to groups of similar cases, both with reference to the pathology and the treatment of the disease. Thus the book combines, in some measure, the advantage of a clinical report and of a formal general treatise.

Of the merits of this first English translation of the volume, as now presented to us, we can speak in terms of commendation. The typographical portion of the task undertaken by the publisher is excellently well accomplished; the plates have been copied, particularly as regards the drawing, in a manner which is well calculated to make us feel gratified and hopeful as to the progress of the art in our country; in the matter of *colouring*, however, they are much inferior to the original—a point to which our artists will do well to devote particular attention.

The editor has not strictly observed the order of succession of the subjects treated of, as it occurs in the original; and we think that his arrangement is a better one, inasmuch as he has brought together the allied cases of the disease, instead of interspersing these promiscuously with others which they resemble only in having had a similar origin, and scattering all confusedly through the book. And he has, moreover, done a kindness to those who may refer to the volume for the practical information with which it is replete, by collating the many medicinal formula which M. Ricord has recommended, and grouping them all together.

Few persons, even of those who read French with much facility for their own amusement or instruction, are aware of the difficulty of making a correct, and, at the same time, an elegant translation for the perusal of others. But Dr. Betton has accomplished this task very happily. We have looked over his rendering of the original with considerable care, and only one passage has struck our eye as being decidedly faulty: this occurs at page 119, as follows: "Had I remained satisfied with these data, I might have believed in this case, as some do, in primary constitutional syphilis, or, with those who do not regard forms with regard to the limits of the infection, in a tardy hereditary affection." Even in this sentence, the author's meaning is appreciable, although we think it might have been transferred into more elegant English.

Dr. Betton has also made valuable additions to the work. He has prefixed to the translation a full *bibliography*, commencing with the year 1495, for which he certainly deserves the acknowledgments of all students in this particular department of surgery; and he has likewise drawn up an exceedingly interesting "History of Syphilis," from the earliest times. In this essay, the author displays the evidence of extensive reading, and great familiarity with the subject of which he writes, and he conveys to his reader the results of his investigations in a most pleasing manner. He cites abundant authority to show that syphilis was known and feared long before the date of its very commonly supposed origin—A. D. 1493–94. Indeed, if there were no direct mention of this disease by earlier writers, strong probability of its existence would be derived from the horrible degree and extent of licentiousness with which the earth has been cursed from time almost immemorial. It was surely not the immediate intention of this essay to "point a moral," yet we do not remember ever to have read a book which so strongly convinced us of the *innate bestiality* of human nature. All other vices and enormities might well be dispensed with, and lust alone, with the crimes and miseries which it engenders, would be adequate to convert any paradise into a hell. If Christianity — not the Christianity of name and profession alone—had conferred no other boon upon mankind than the introduction and inculcation of purity of social life, how vast the benefit, how immeasurable the blessing! and how necessary the operation of such an influence!

> "The soul grows clotted by contagion,
> Imbodies and imbrutes, till she quite lose
> The divine property of her first being."

There is one opinion advanced, or, at least, acquiesced in, in this preparatory essay, with which we cannot coincide, viz.: that prostitution, as an institution or a custom, must be submitted to, and winked at, if not actually established, under certain police regulations, "as a safeguard to the virtue of honest women." We cannot admit such a necessity; as well contend that street beggars should

be permitted and encouraged in their vagrancy, as a safeguard to the public and private purse. But the fact is that the greater the countenance which is extended to this class of parasites, the more they multiply, and the more common become burglaries and highway-robberies, thefts, and petty larcenies; because idleness, and its inevitable accompaniment and consequence, vice, are fostered; and after a time, even the street-walker, now so humble in his petition and demeanor, will, perhaps, exhibit himself in the more menacing attitude in which the "*poor lame soldier*" revealed himself to Gil Blas on his memorable journey to Penaflor. Every penny given to a common beggar only tends to confirm him in his poverty and dependency; official protection makes the matter worse, so that the self-respect which has long recoiled from asking the first alms at length bows its head in presence of the trappings which the State hangs upon the breast of mendicancy. And so will it be with every species of vice.

We believe that, in every community in which just laws are duly enforced, "the virtue of an honest woman" will be her best and her sufficient protection, (excepting, perhaps, against those whom insanity has deprived of a proper self-control, and for the safe confinement of such the State is certainly answerable):

"A thousand liveried angels lackey her,"

to quote the beautiful and eloquent sentiment of the elder brother in the "Comus."

We believe that the lascivious desire is excited and perpetuated, in constantly increasing strength, by the physical indulgence, and by the fostering of impure emotions; and that, so long as the gratification is attained or attainable, the disposition remaining the same, so long will sensuality in thought and acts live and flourish. But we do believe that the desire may be overcome, and that, excepting in the instances of disease just alluded to, and for which confinement should be enforced, it will be overcome by a continued exercise of *rationality* on the part of the individual, i. e. *the human being* must steadily and nobly combat the disposition which inclines him or her to become *a brute*. The conflict may be long and arduous; the low desire and the proneness to yield to its promptings may for a time linger around their wonted home, like the spectre-lights which haunt old graveyards; but these will disappear as the moral atmosphere becomes freshened and purified.

Some, though but a few, of the plates, and the pages of letter-press accompanying them in the original work, have been omitted from this edition of M. Ricord's work; we regret this, both because of their intrinsic value, and because we think it is due to its distinguished author that the volume should be reproduced here in as nearly as possible the same degree of completeness with which he gave it to the world.

As it is, however, the present edition of so valuable a work is an important addition to our standard surgical library, and it will, we doubt not, be so regarded by the profession. It is published, too, at a price which makes it very much more accessible to all than the original can be. F. W. S.

ART. XVIII.—*On Anæsthesia and Anæsthetic Substances generally; being an Experimental Inquiry into their Nature, Properties, and Action; their Comparative Value and Danger; and the best Means of counteracting the Effect of an Overdose.* By THOMAS NUNNELY, Esq., F. R. C. S. E., &c. &c.

THIS highly interesting and able communication is published in the sixteenth volume of the Transactions of the Provincial Medical and Surgical Association; of the second part of which volume it occupies two hundred and fifteen pages. It is the only extended experimental inquiry into the nature, properties, and action of the various anæsthetic agents, their comparative value and danger,

and the most reliable antidotes or remedial means to be resorted to when an overdose has been taken, with which we are acquainted.

Convinced of the vast importance of the question in reference to the practical application of these agents, and of the impossibility, from the deficiency and vagueness of the information in possession of the profession, of arriving at any accurate and certain conclusion as to their true value, and the circumstances in and under which they, or any of them, should be employed or not, Mr. Nunnely undertook a series of experiments to assist in affording that information, and to furnish evidence from which such inferences and deductions may be fairly drawn as shall, if possible, render their practical application as safe and certain as the nature of the case admits.

"For this purpose," Mr. N. remarks, "we require facts to guide us. The inquiry is therefore strictly experimental, and has been undertaken for the purpose of ascertaining:—

"1. If the property of inducing anæsthesia be confined to the few substances which have hitherto been used, or if there be not a large class of bodies which have in common the property of temporarily suspending consciousness or sensibility, or both, vitality remaining; and if this be so, whether these substances are characterized by any similar composition, or chemical alliance, and have a common *modus operandi* upon animal bodies?

"2. What their *modus operandi* is? or, in other words, upon what structures do they act? what changes do they produce? what are their physiological effects? is their primary effect local or general?

"3. Is there any one of these substances which should be selected in preference to, or to the exclusion of, all the others? Is there any one the temporary effects of which are more complete and certain, the permanent more harmless, and its administration more under our control than those of any of the others, that we should uniformly retain the employment of it, and reject the use of them?

"4. Is there any essential difference in the action of these substances according to the mode in which they are administered? Do they produce the same effects in whatever way they are carried into the body, or does the effect depend upon the nature of the tissue upon which they are applied? and does the same dose, when applied to the same tissue, and in the same manner, invariably produce the same uniform results?

"5. Are there any symptoms by which we may accurately judge of their effects, and ascertain and control the point to which the system may with safety be brought under their influence?

"6. In case of an overdose, are there any means which can be employed to counteract the effects? Do we possess any antidotes, or are there any remedies? If so, what are they, in what manner do they act, and how should they be employed?"

Although Mr. N. admits that the answers he has given to these six propositions, which embrace a very wide field of inquiry, or perhaps to any one of them, may not be complete and satisfactory, still the series of experiments upon which these answers are based are in the highest degree satisfactory. If they do not settle conclusively all that it would be desirable to know in relation to the qualities and action of each anæsthetic agent, its relative value either absolutely, or under particular circumstances, having reference to the age, temperament, condition of health of the individual, and the nature of the cases in which the production of anæsthesia is desirable; they nevertheless throw much light upon each of these circumstances, while they are calculated to render the employment of this or that anæsthetic agent less a mere matter of empiricism than it has been hitherto.

The substances experimented upon by Mr. N. and of which the effects are detailed in the communication before us, are, chloroform, alcohol, spiritus vini of the Pharmacopœia, sulphuric ether, spiritus etheris nitrici, Ph. L., nitric ether, acetic ether, chloric ether, chloroform and spirit of wine mixed, hydrochloric ether, hydriodic ether, hydrobromic ether, Dutch oil or chloride of olefiant gas, oleum æthereum, Ph. L., heavy oil of wine, aldehyde, two or more of these mixed together, iodoform, olefiant gas, light carburetted hydrogen, coal

gas, benzole, camphor, naphtha (three varieties), oil of turpentine, creasote, protoxide of nitrogen, hydrocyanic acid, coneine, hydrogen, carbonic acid, carbonic oxide, bisulphuret of carbon, sulphuretted hydrogen, bromoform.

The mode of administration was by—1. Inhalation, in various degrees of concentration, for a limited period. 2. Inhalation for a prolonged period. 3. Internal administration by the stomach and rectum. 4. Injection into the veins. 5. Limited application to the skin—local action. 6. A trial of various remedies and presumed antidotes.

The *post-mortem* appearances are given in each experiment when death was occasioned.

The animals submitted to experiment were chiefly taken from the four classes of the vertebrata; some also of the invertebrata were used, though dogs and cats were principally employed; yet Mr. N. thinks that the variety has been sufficient to show that, without exposing himself to the charge of unwarrantably generalizing, he may affirm the effect throughout the animal kingdom to be uniformly of the same kind, and therefore that he is fully justified in considering it would (as indeed with many of the agents we know is the case) be the same in man; and consequently, in applying the practical inferences to the human subject, we are not very liable to go wrong.

Mr. Nunnely details, first, the whole of the experiments, 363 in number, undertaken to solve the questions proposed in the six propositions already stated; next follow such remarks as the effects of each substance individually appear to call for; after which are presented the general inferences and conclusions which he supposes to be fairly and legitimately deduced from the experiments, in the form of answers to the queries propounded in the outset.

Interesting as are the results of all the experiments performed by Mr. N., and valuable as are the remarks made by him in reference to the anæsthetic effects and comparative value of each of the articles experimented on by him, we must pass them by and confine our present notice to the general conclusions drawn by the experimenter, and offered in reply to his leading queries. It is of course evident that the details of the experiments admit of no analysis; as their value to those who would desire to test by these the accuracy of Mr. N.'s deductions depends upon the minuteness with which all the details are given; and, in reference to his remarks upon the individual articles to which each series of experiments refers, we should scarcely be doing justice to Mr. N. or to our readers by attempting to give a digest or abridgment of them.

In reply to the first query, Mr. N. remarks:—

"The experiments related in the foregoing pages prove, most unequivocally, that the power of temporarily suspending consciousness and sensation, more or less completely, is not confined to the few substances which have hitherto almost exclusively been used for the purpose, but that many other substances possess the property in common with sulphuric ether and chloroform. Many in a less degree, some in an equal, a few in a greater, and, probably, there may be other substances in the various compounds of the ether and allied groups, which chemistry is almost daily adding to the list, that may be discovered to possess the power in a still greater degree."

"If those bodies are excluded from our consideration which do not appear, though they may induce insensibility, to produce that condition of the system which is understood by the term anæsthesia, as the protoxide of nitrogen, and sulphuretted hydrogen, the other substances experimented upon may be arranged into three classes, according to the number of elements which enter into their composition:—

"1. The quaternary, into which, besides carbon, hydrogen, and oxygen, one other element enters, as nitric ether; these are very few in number, and not remarkable for anæsthetic power.

"2. The ternary compounds, which are far more numerous and powerful. They all agree in having carbon and hydrogen entering into their composition, while the third element is very varied. In the oleum æthereum, in aldehyde, in sulphuric and acetic ethers, it is oxygen; in chloric and hydrochloric ethers, in chloroform and chloride of olefiant gas, it is chlorine; in hydriodic ether (iodide of ethyle), it is iodine; in hydrobromic ether (bromide of ethyle),

bromoform, and in bromide of olefiant gas, it is bromine; while in hydrocyanic acid, the third element is nitrogen. Moreover, of this third element, even when the same, the relative proportions may vary considerably, the anæsthetic power of the substance remaining very great; for instance, in the atom of chloroform there are three of chlorine, whereas, in the atom of chloride of olefiant gas, there are only two atoms, while the proportions of carbon and hydrogen are much greater in the latter substance than in chloroform.

"It is worthy of remark, that in all these bodies, with one exception, the carbon and hydrogen may be considered as forming a radical base, which unites with the oxygen, chlorine, iodine, and bromine, to constitute a neutral body, or, as we shall presently mention, to act as a base for another combination. In hydrocyanic acid, the base would appear to be formed of carbon and nitrogen, the hydrogen in this playing the part of an acidifier; the resulting compound being the feeblest and most unstable of all acids. This slight acidity can, however, be scarcely considered as a distinguishing character; for we find that conia and other similar vegetable proximate principles, where the same three elements constitute the substance, have a feeble alkaline action, the different character of these bodies depending, probably, rather upon the amount of nitrogen than of hydrogen.

"3. In the third group the substances are all bi-elementary; they are, with three exceptions, hydrocarbons; the exceptions being carbonic oxide, bisulphuret of carbon, and chloride of carbon. The most simple, obvious, and striking physical properties which the whole of these substances possess in combination is that of being gaseous, or of being so volatile that at the ordinary temperature they are readily converted into vapour.

"Although in the first group, that of quaternary compounds, the number of substances is limited, there are several of those which, on ultimate analysis, are found to consist of only three elements, which most probably, in mode of combination, have a strong analogy, if not identity with this group. For instance, acetic ether, although only containing hydrogen, carbon, and oxygen, has probably these elements arranged, in the first instance, so as to constitute oxide of ethyle and acetic acid, which as such, then enter into combination with each other to form acetic ether, as the nitric acid and oxide of ethyle do; this also may, perhaps, be the case with hydrochloric ether."

"If we analyze the composition, and compare the effects of each of the substances in the second group, we find that we may in succession exclude the third element of which each consists, and yet have an effective anæsthetic; thus, in sulphuric ether, we have oxygen, but no chlorine or nitrogen; in chloroform, chloride of carbon and chloride of olefiant gas, no oxygen or nitrogen, but chlorine instead; in hydriodic ether, iodine; in bromoform and bromide of olefiant gas, bromine is substituted; while in hydrocyanic acid, we have neither oxygen nor chlorine, but nitrogen. So that by this process alone, we should come to the conclusion that, however advantageous one or other of these third substances may be in modifying the action of the other two elements, the hydrogen and carbon of which the agent consists, they cannot be regarded as at all essential to the constitution of an anæsthetic body. This conclusion is rendered perfectly certain, when the constitution and action of the third group of substances are considered. Here most of the substances only consist of hydrogen and carbon, and yet among them are found agents which are possessed of considerable anæsthetic power, as, for instance, benzole, common coal gas, and olefiant gas."

"Hydrogen, if given alone, does not possess any anæsthetic property whatever, and if given in combination with any other body than carbon, it certainly does not act as an anæsthetic. With oxygen it is perfectly inactive; with most other elements it becomes a deadly poison. On the other hand, if other combinations of carbon are employed, as the bisulphuret of carbon, carbonic oxide, and chloride of carbon, it is found that these substances do act as anæsthetics; some of them not so safely, pleasantly, or so manageably, it is true, being altered and modified by the other substance with which the carbon is combined; but, nevertheless, still acting as anæsthetics. Hence, I think, we may legitimately arrive at the conclusion that to constitute an anæsthetic agent, carbon

must be present, and that by the combination of it with hydrogen, or perhaps chlorine, we have the basis of the most effective anæsthetic agents. Whether the hydrogen itself plays any important part or not, it is difficult to say with certainty; probably it does, for though, *per se*, it appears to be absolutely negative, yet, as in combination with sulphur it materially modifies the action of this, so we may also suppose it to modify the action of carbon when in combination with it, and thus that it plays an important part."

The general recapitulation of Mr. N. is as follows:—

"1. That no anæsthetic agent has yet been discovered which does not contain carbon.

"2. That the combination of carbon with hydrogen or chlorine constitutes the best binary agent, and that the greater the proportion of the carbon to the hydrogen, being at least equal to it, the more powerful the agent is; and if we could obtain a pure liquid of hydrocarbon, containing these equal proportions, easy to be volatilized, and of constant composition, it is highly probable that it would constitute a valuable and safe anæsthetic; for, if the carbon be too much in excess, as in benzole, where the proportions are as two of carbon to one of hydrogen, although the compound is a powerful and safe anæsthetic, yet it is neither so manageable nor pleasant as where the proportion of carbon is not so great, symptoms being developed which may reasonably be supposed to arise from the excess of carbon.

"3. That hydrogen and carbon may unite as a radical base with oxygen, chlorine, iodine, bromine, nitrogen, and perhaps some other substances, to constitute anæsthetic agents; and that these compounds, or at least some of them, may again unite with acids, consisting perhaps of the same elements as the base itself, and yet retain, to a certain extent, the same property as the oxide of ethyle; as nitric, chloric, acetic, and hydrochloric ethers do.

"4. That of these ternary compounds, those act the best, all things taken into consideration, in which the third element bears the least proportion to the hydrocarbon, especially the carbon; as, for instance, ether and alcohol, perchloride of formyle (chloroform), and hydrochlorate of the chloride of acetyle (Dutch liquid), and of the binary compounds, those in which the atoms are in equal proportion to each other.

"5. That substances which are analogous in composition and isomorphous in form, as in physical and chemical character, so are they often similar in physiological action; but where they are not isomorphous, their action is not similar, as chloroform and iodoform.

"6. That substances which are isomeric, or nearly so, but very dissimilar in physical and chemical properties, are also so in physiological; as witness several of the pure hydrocarbons, which, though very similar in composition, are very different in properties.

"7. That, should any other combination of elements be discovered which shall possess more valuable and important anæsthetic power than those yet known, its composition will probably be found in accordance with the principles now announced.

"Lastly. We may conclude that the action upon the animal economy of all true anæsthetic agents, whether carbons or hydrocarbons, whether simple or compound, is essentially the same in character."

In reply to the second query, Mr. N. presents the following as the answers resulting from his experiments.

"1. That the action of anæsthetic agents is immediately and primarily upon the nerves. That the heart, respiration, circulation, the blood, and the muscles are secondarily affected.

"2. That in the first instance all these substances act as stimulants, this action being more or less prolonged, but to some extent perceptible in all. In the more powerful anæsthetics, as hydrocyanic acid, chloroform, and the chloride of olefiant gas, the stage of stimulation is short and comparatively feeble (unless with the two latter the dose be very small, when it is evident enough), the sedative effect being quickly superinduced. With most of the others, it is more prolonged; with ether it is considerable, with aldehyde it is still more so; with the bisulphuret of carbon, turpentine, and naphtha, even

when inhaled, it is very great, and when applied locally, intense inflammation only is induced, anæsthesia scarcely being occasioned; while with alcohol, even when taken internally, unless the quantity be enormous, only the stimulant effect is produced at all.

"3. That the action is at first local. When these agents, in substance or in vapour, are applied to a limited portion of the body only, that portion is rendered anæsthetic; but that, if the application be more prolonged, or extended over a larger surface, then the effects become general. Thus we may paralyze a part or the whole of a single leg in the frog and toad; by continuing the application, the corresponding limb becomes involved, and a still farther continuation will affect the entire body of the creature, consciousness, sensation, and motion being all lost. In a large insect, or a reptile, we may stupefy the anterior or posterior half of the body with the attached limbs, the other part remaining unaffected. Even with the higher animals, the experiments demonstrate that, in the cat and rabbit, a part of a leg may be locally so affected as to be altogether insensible to the amputation of it, the general system not differing from its normal condition. In a man, a small portion of the surface or an entire finger may be made insensible, the feeling of numbness extending along the nervous trunks far beyond the part to which the application is made. Hence we may fairly conclude that the law universally holds good.

"4. That although the action of anæsthetic substances is upon the nerves, and principally upon those in connection with the cerebro-spinal axis, it is not primarily and directly upon the cerebral masses and sensorium, but upon the peripheral expansions of the nerves; that, *cæteris paribus*, the larger the number of these which can be directly and simultaneously acted upon, the greater will be the effect. Hence the *rationale* of the action of these substances when inhaled. When taken in substance into the stomach, they can only come in contact with a comparatively small number of terminal nervous papillæ, whereby is occasioned their stimulant, rather than their anæsthetic effect; but when inhaled, they come in contact with the whole expanded respiratory surface and the nerves there exposed. Of course, the more concentrated the vapour, the more intense and sudden will be the anæsthetic effects."

In answer to the third question, Mr. N. thus sums up his general conclusions from the experiments detailed.

"The substances which appear to possess the greatest power, and the effects of which are the least objectionable, are the oxide of ethyle (sulphuric ether), the gaseous carburetted hydrogen (of which common coal gas is perhaps the best), chloric ether, hydrobromic ether, chloroform, the chloride of olefiant gas, and the chloride of carbon.

"*Ether*, which, from being the first substance of this kind introduced was for some time almost exclusively used, has now almost ceased to be employed. In power, it certainly is much inferior to several of the other bodies; its action is not uniform and certain: more excitement is frequently manifested in its use; it produces much more irritation while being inhaled, and afterwards headache and feverishness are more liable to follow. These are objections so weighty, although in some degree counterbalanced by its general safety and the less liability to collapse supervening, that, unless under the circumstances pointed out in the remarks upon this fluid (that is, where there is reason to suspect any peculiar susceptibility to the action of the depressing influence of anæsthetics—such as disease of the heart of an asthenic character, or considerable constitutional debility), and other anæsthetics are not at hand, it will hereafter, I apprehend, be rarely used.

"*Common Coal Gas* is a safe and effective agent. Its cheapness is also an important recommendation. On the other hand, the disagreeableness of its odour as compared with the pleasantness of the chlorides, and its gaseous form, especially the latter, are serious impediments to its general employment. Under any circumstances, the inhalation of a gas is not of so easy and convenient accomplishment as that of the vapour of an easy evaporable fluid, more complicated apparatus being requisite. In places where the gas is not used for domestic purposes, the inconveniences of transporting and preserving it would be found to be objections not to be despised; but where other agents

are not at hand, or from any circumstances are not thought to be altogether applicable, no hesitation need be felt in employing this substance.

"*Chloric Ether* is a pleasant substance both in taste and smell, and in a very young and feeble person, I should feel disposed to employ it in preference to chloroform; but in ordinary cases, all other things being equal, inasmuch as a larger quantity of it is necessary than of either of the following, I should not think its use would be urged.

"*Hydrobromic Ether* is a safe, pleasant, and effectual anæsthetic, but inasmuch as it does not possess any such qualities as to render its employment more advantageous than some other substances, the very great cost of it will, unless this can be materially reduced, entirely prevent its general use. One manufacturer would not prepare it for me under one guinea an ounce.

"*Chloroform* is undoubtedly one of the pleasantest and most powerful anæsthetic substances known; indeed, until I showed the safety of the chloride of olefiant gas, by far the most so. That it is the safest can by no means be maintained with equal certainty; on the contrary, in safety I believe it to be inferior to all the other substances mentioned just below." Some of the indications for and against its use are the opposite condition of things under which the sulphuric has been recommended. "There is one unpleasant effect which sometimes follows the administration of chloroform that I have not seen noticed, but of which I have found more than one person complain, namely, that for long (even months) after its inhalation, they have occasionally experienced the same sensations as they did at the moment of breathing it."

"*Chloride of Olefiant Gas.* This fluid I have now administered so frequently in practice, that I think I am justified in stating the inferences drawn from the experiments upon animals are correct. It appears to be unattended with the troublesome excitement produced by ether on the one hand, and on the other with less of the tendency to collapse, which is so objectionable in chloroform; hence, if that only true test, experience in general use, should confirm this opinion, it will form a not unimportant addition to the list of anæsthetic agents. In the report upon the action of Dutch liquid, which I made in the *Journal* of the Association, I was misled as to the relative cost of it and chloroform. I have recently had reason to think that, owing to a want of care, ignorance, or some other cause, an improper method of manufacturing the fluid was employed, and that it contained spirit of wine, hence the lower cost of its production. I would, however, here state, that it appears not improbable a combination of the chloride of olefiant gas with spirit, not a mere admixture of the two fluids, but a combination during manufacture, may probably prove, not only a sufficiently cheap, but a valuable anæsthetic."

Chloride of Carbon. Mr. N. is doubtful of the result of his experiments upon this substance, having reason to suppose that the substance employed by him was a chloride of a hydrocarbon, dissolved in spirit; should, however, experiments with a pure chloride of carbon confirm the supposition of its anæsthetic powers, and it be pleasant and safe in use, it will be generally employed, as it can be prepared on a large scale at a very small cost.

To question four, Mr. N. sums up his answer by referring to what has already been said in reference to the effects of each article, and the general statement that the same dose of an anæsthetic (with one exception—hydrocyanic acid), when taken into the stomach, does not produce the same effect as when inhaled. Mr. N. believes this difference to depend solely upon the greater extent of surface with which these agents are brought into contact when inhaled, and their being in a state of vapour. In regard to the uniformity of result from similar doses and modes of administration, Mr. N. remarks, that there is considerable variation in different individuals as to their susceptibility to the influence of these agents—one individual being far more easily affected than another. The very young animal will bear, not only a proportionably, but positively a larger quantity than the adult; while an older, but not an adult animal, will not bear the quantity which an old one of the same species will. Moreover, at different times, the same animal is far more susceptible to the influence of them than at another. Hysterical females, and lively excitable animals are much more susceptible to the action of these agents than the unexcitable and phlegmatic.

The quantity of any anæsthetic which is inhaled in a given time is of the utmost importance; *cæteris paribus*, the more concentrated the vapour, by far the greater is the danger. Given slowly, the same animal will inhale at least twice the quantity without dangerous symptoms, that, if inhaled very rapidly, would be not unlikely to cause death.

In reply to question five, Mr. N. remarks:—

"Though, without doubt, in every single case, we cannot control the effect, yet, as a general rule, it may be affirmed that we can both judge of the effects and control the point at which we wish to arrest the influence of these agents, provided due care be used in administering them."

"To insure safety, the two principal points to be attended to in the administration of an anæsthetic are the quantity used alone, and the temperature at which it is given; of course, the higher the temperature the greater the quantity of vapour generated in a given time. It is of the utmost importance to take care that the vapour is not so concentrated as to produce a very sudden impression, or the nervous energy may be so suddenly and completely suspended that the heart at once ceases to act."

Mr. N. thinks it a very common error, that of carrying the anæsthesia too far. In order that no sensation of pain should be produced, it is not necessary to render the patient so utterly powerless as to be altogether unable to stir. This, he adds, is a point of especial importance in the practice of midwifery.

"If it be determined to use an anæsthetic agent, in a case of parturition, that one should be selected which gives rise to the least depression, either temporary or permanent, and that in all cases especial care should be taken to give as little as possible. It is rarely, indeed, necessary to produce unconsciousness, which is rather prejudicial than not, by suspending the pains and retarding labour; a dreamy condition of half conscious obliviousness is, unless there be some considerable manual interference required, all that it is either necessary or desirable to produce. The plunging the woman into a profound state of unconsciousness has, I am convinced, often been productive of the worst and most fatal consequences."

Nothing, according to Mr. N., taking all things into consideration, answers so well for the administration of the anæsthetic agents as a large, moderately fine linen handkerchief, folded first into quarter size, and then into a funnel shape. While it retains quite sufficient of the fluid, it does not obstruct the free ingress and egress of air, consequently the process of respiration is but little disturbed.

"The first indication of an animal being pretty well under the influence of the agent is the deeper, fuller, and more prolonged respiration; he inhales as though it were pleasant to do so. This is not always observed, though it very frequently is. At first there is some little excitement, and a disposition to move, the pulse is rather fuller and quicker, the pupils somewhat contracted, and the eyes wandering; there is often incoherent talking; these symptoms speedily pass off, and loss of volition, and indisposition, or inability to move comes on; the eyes become upturned, the pupils dilated, the pulse smaller, the muscles flaccid, and unconsciousness and insensibility ensue. If the quantity of vapour be now lessened, the respiration becomes more free and natural; if not, it will be laborious, and presently almost or entirely cease. The lips become closed, and in expiration, the cheeks may be distended by the air, which in escaping may produce a blowing noise. This I regard as a certain sign that the system is so fully under the influence of the anæsthetic as to border upon danger. At this point, or before (for the last symptom is by no means invariably present, the mouth being often open instead of closed), the pupils are widely dilated, the limbs become as flaccid as possible; there is no reflex action, the urine or feces, or both, may involuntarily escape, the conjunctivæ and the lining membrane of the mouth—often indeed the whole countenance, become pale and bloodless; the heart may be perceived acting most rapidly, with a short, feeble throb, the pulsation in the arteries being scarcely, if at all perceptible, and the respiration becomes either very quick and inefficient, or slow and gasping. If this entirely stops for any length of time, even though the heart may be felt still to move, recovery will be doubtful. In operating, if the surgeon should find

the flow of blood to cease, he ought *immediately* to be on his guard, as this may indicate such a condition of anæsthesia as to seriously compromise the heart's action; and if the inhalation be carried farther, might be fatal."

According to Mr. N., we may easily prevent the vapour from being inhaled at first in too concentrated a condition, by not putting the handkerchief in the first instance too closely over the face; or, if an apparatus is used, by opening the air valve. If there be no excitement, we are not to increase the strength of the vapour; but if there be excitement, then by applying the handkerchief more closely, or by shutting the valve, to terminate this by more fully and quickly bringing the system under the full influence of the agent, but taking care that, so soon as there are indications of unconsciousness and insensibility being produced, in a great degree to withdraw the anæsthetic, and only to give such a diluted vapour as shall just suffice to keep up the condition of insensibility, which, when once produced, may be usually maintained by a very moderate quantity of vapour; for it must be borne in mind that the *full effect* is not always *instantly* produced as the vapour enters the lungs, nor do the effects always immediately pass off; indeed, the rapidity with which the effects disappear does not always correspond with their intensity.

"If," remarks Mr. N., "these directions be attended to, rarely will death be occasioned by either ether, chloride of olefiant gas, or chloroform, although, as I have before stated, chloroform I consider to be the most dangerous of all; yet even of this, when due care is exercised, experience has shown the danger not to be very great."

Mr. N. adds that it is of considerable importance the stomach should not be distended with food; if it be, vomiting is much more likely to be caused, and he thinks a fatal result more likely to be induced in such a condition. In several of the animals in which a small dose destroyed life, the stomach was found distended with food recently taken.

In reply to the fifth query, Mr. N. observes that he considers safety in the administration of anæsthetics is rather to be found in guarding against the exhibition of an overdose than in seeking for an antidote or remedy against the effects of it.

"If an antidote of much value exists, it has yet not been discovered; of the remedies proposed, no one appears to possess any great power in such a condition of things as would call for its employment. It is true, *agitation, cold affusion, a cold stream of air*, perhaps *electricity or galvanism*, and *some other stimulants*, will expedite the process of rallying where the depression is not very profound; so, also, it is possible that *venesection*, by lessening the pressure of the column of blood upon the walls of the heart, especially the right, may, when this organ is still acting, facilitate its contraction, and thus assist in restoring the circulation; at the same time, it is by no means certain that, with such a depression as exists in the nervous energy, the abstraction of blood may not in itself tend to increase, or, at any rate, to prolong this condition, precisely as it would do in syncope, to which state it appears not improbable that induced by anæsthetics bears some considerable analogy; and this analogy would seem to point out the horizontal as the proper position for a person in such a state to be placed."

"In the great majority of cases, so long as the heart acts, and respiration at all goes on, the mere withdrawal of the anæsthetic is followed by the restoration of the functions, and therefore the question forces itself upon us as to the positive value or not of *any* of these means. If the heart has ceased to act, no blood will flow on a vein being opened. If respiration has ceased, and the heart does not move, *galvanism*, though it may make the voluntary muscles violently contract, only does this by the sooner exhausting their power to do so, without in any way restoring the vital functions. *Oxygen*, of course, if there be no respiration, cannot be taken into the lungs, and the performance of artificial respiration with it would be both difficult and incomplete, even were it at hand, which it would not in the great majority of cases be, while, so far as experiment and chemical action goes, it does not appear that, if it were ever so fully inhaled, even in combination with the anæsthetic substance, it would in any manner prevent the development of full anæsthesia, and therefore it cannot be for

a moment imagined it would in any way counteract the effects when they are developed. *Ammonia* we have seen to be useless and inert, whether given mixed with the substance, or after its effects were produced. The coldness and depression which in so marked a degree are present do not encourage us in the supposition that either *cold water* or *cold air* to any very great extent would be useful—a conclusion which the experience of their effects confirms. We are therefore reduced to seek just that assistance from their use as shall suffice to produce such a moderate shock, if the nervous system be capable of receiving any, as may cause a reaction and rousing of its powers, by which the heart and respiration may again be set in motion, or rendered more vigorous. This appears far more likely to be accomplished by the sudden dashing of a small quantity of cold water upon the face and chest, possibly alternating with heat to the latter, or such a moderate stream of air as may be produced by a fan, and not too violent agitation of the body, than by excessive violence, or by entire and long-continued immersion. A moderate interrupted compression of the chest, and pressure upwards of the abdominal viscera, should not be neglected, as tending to change the air in the lungs, and thus to get rid of the vapour there remaining; or, with the same intention, a stream of air might be, not too forcibly, blown through a small tube into the larynx for a minute or two."

Our readers, we are convinced, will not be displeased at the length of our analysis of Mr. N.'s most interesting communication. Anæsthetic agents are now extensively employed in every case where the occurrence of severe pain is anticipated. And the manner in which their bold and fearless administration is spoken of by some is certainly calculated to lead the inexperienced and incautious into the belief that the production of anæsthesia is attended with little or no danger, whatever may be the circumstances under which it is induced, the agent that is employed, or the quantity that is given. Beneficial as the results to be derived from the induction of anæsthesia in many cases unquestionably are—nevertheless, to derive from it all the good it is calculated to afford, with the least possible risk of danger to the patient, the proper practical application of all the anæsthetic substances becomes a most important question, and one that deserves to be well and thoroughly investigated. For having commenced in the proper manner this investigation, our thanks are due to Mr. Nunnely. The general conclusions he has deduced from his experiments are of no trifling importance, and with them every physician should be made acquainted. This, so far as our circulation extends, we have now endeavoured to do; and though our extracts from the communication of Mr. N. have been somewhat long and frequent, we cannot close this notice without still further extending it by quoting his very forcible language in reference to *chloroform*.

"It is," he remarks, "of all the anæsthetics with which I am acquainted (with one exception), one of the most, if not the most agreeable, and at the same time it is possessed of very considerable power. It is for the most part pretty constant in its action; but I am also bound to add, it is one which requires more care in its administration than most of the others, and I would venture to say much more than has always in practice been exhibited. It is true that many fatal cases in which it has been given are known, but, I am firmly convinced, there are many more fatal cases which have not been reported. Even in those cases which have come to light, all sorts of explanations, and attempts to explain away the true cause of death, have often been attempted, rather than admit the fact of the person having been killed by the chloroform. This is, perhaps, scarcely to be wondered at, as the admission of the fact would be almost like acknowledging being accessory to the death of the patient, which most men naturally shrink from. A careful examination, however, of the preceding experiments cannot, I think, but convince any impartial person that, in reality, death in those cases was caused by the chloroform; either from some abnormal condition or peculiar idiosyncrasy, by which the person was rendered unusually susceptible to its influence; or, as I believe, far more frequently from a want of that experience and care in its administration which the exhibitor should have possessed and attended to. When I see statements by medical men that they have 'boldly administered' chloroform in quantities of from six drachms to an ounce and a half at a time without any ill effects, I cannot but

congratulate both the patient and the doctor that the rashness in employing such quantities has been equalled by the carelessness in administering it, so that by far the greater portion of the fluid has been wasted by escaping into the air of the room, rather than passed into the lungs of the inhaler, and thus the carelessness of the administrator has, contrary to what generally occurs, and which he would do well not to risk again, been the means of escaping from the effects of his rashness." D. F. C.

ART. XIX.—*Sleep Psychologically considered with reference to Sensation and Memory.* By BLANCHARD FOSGATE, M. D., Physician to the New York State Prison at Auburn. New York, George P. Putnam, 1850: 12mo. pp. 188.

DR. FOSGATE, in the present essay, has given a very interesting, and in general correct, account of the phenomena of sleep. In his explanation of dreaming, he has, however, advanced a position which he will find it very difficult, if not impossible, to prove. We allude to his postulate that "the mind is *absolutely* sleepless." That during sleep the mental organ is still active—consequently, that we always, strictly speaking, dream—but, when the mental excitement is not so far "exalted as to arouse any of the senses," we do not, upon awaking, retain any recollection of the circumstance; for, according to Dr. F., "we are dependent on external sensation for a remembrance of what passes in the mind in somnolency." Perfect sleep, as defined by Dr. F., is the repose of all those organs of perception by which the mind is connected with the external world, in which state we retain no memory of our dreams, because "any mental operation not based in concurrent outward relation cannot be recollected."

Let us, however, do our author full justice, by presenting a few extracts from his general conclusions.

"Sleep," he remarks, "is a phenomenon of that part of our existence by which we are connected with the external world, and during sleep the mental operations proceed, though modified by its influence. During this state, the mind is restricted in its operations to the stimulus afforded by the activity of the innate powers of the cerebral organization, and as one consequence of this activity, the memory of past events is brought to view. We arrive at this conclusion from those states of mind in which we perceive that bygone circumstances are re-called and associated in the mental process. And, although, in these operations, the mind is brought to a remembrance of what has passed, the memory is not impressed with the thoughts which occupy it, while external sensations do not contribute their stimuli to its operations. To this conclusion we come, from those states of being in which we know that the mind was active while the senses were dormant, and there was no remembrance, on awaking, of what then transpired. From the fact that the mind is active without the stimulus of external sensation, but that without this stimulus there is no memory, and that the perception can be as readily stimulated by the internal as external sensations, we conclude that it is exclusively through the activity of the organs of perception that the memorial faculty is manifested, and that these organs must be approached through the special senses to develop this mental power."

Memory, says Mr. F., "is a mental element manifested through the activity of the organs of perception. It is requisite, however, that these organs receive their stimulus from certain sources, otherwise the memorial faculty will not be impressed. Where they receive their stimulus from the propensities or sentiments, the resulting mental operations are not remembered. From this circumstance, we apprehend, it is that phrenology has concluded the animal organs are not possessed of memory; but whether they are or not, they do not stamp the result of their stimulus indelibly upon the mind.

"Universal experience teaches that what we see or hear, we remember better

than what we imagine or read about; because memory is much clearer and more durable when its objects are perceived through the external senses than when it is merely a deduction of the mind, or, in other words, when it is only an intellectual impression."

It is not because in these cases the power to recall by a mental act images or ideas previously acquired—which act constitutes memory—but because the images or ideas which we receive by sight, and hearing, and feeling, are themselves more clear, definite, and durable than are the most vivid and accurate description of the objects, or scenes, or sounds, or sensations, to which these images or ideas relate. But the results of mere mental operations—the compound or modified images or reflex ideas which the mind itself creates—are as readily recalled as are the simple primary impressions received originally through the senses. Witness the mental creations of the poet, the painter, and the sculptor. Here images are recalled and modified, and combined, by a purely mental effort—and these modifications and combinations are again recalled at will by an effort as purely mental as the first.

"The perceptive faculty has three sources of stimulus: viz., through the media of internal and external sensations, and the powers of reflection. The thoughts which follow the impressions of the first, when unconnected with the second, are not remembered; and those flowing from the last, under similar circumstances, are imperfectly retained; but the perception of impressions through the organs of external sense develops the memorial faculty in its fullest power.

"Through perverted or imperfect sensations, perception is so modified that dreaming and insanity singularly harmonize. The perceptions being in consonance with the state of the impressions transmitted, the perception of actual existences is imperfect, and memory fails to recall and associate the past with the present in accordance with reality:—hence some of the incongruous results of the mental operation during these states.

"In old age, the organs of sense lose their nice property of receiving impressions perfectly; consequently, the perceptions are indistinct and the memory of recent occurrences is defective; but the remembrance of circumstances which occurred in times long past, when the senses were intact, is comparatively fresh in the mind. The mental operations that depended upon the internal impressions of those times are forgotten, and only those in which the external senses largely contributed are retained. If memory, as advocated by Dr. Combe, be a mode of activity of the knowing or perceptive organs, and if this activity can be stimulated by the will, then we may possibly account for this peculiar feature of advanced age. Early impressions having been made upon organs in good condition to receive and transmit them accurately to the perceptive faculties, a corresponding effect was there produced. Now volition is little impaired by age, and through this power the mind can at will recall mental perceptions; but the perception of impressions made through impaired organs of communication is so feeble from the imperfection of the instruments employed, that, owing to this feeble perception, there is but little for the will to act upon, and consequently, early perceptions are readily recalled, while those of recent occurrence are indistinctly remembered."

"During sleep, memory may be inactive from absence of external stimuli, and the judgment deranged through the operation of sensations unconnected with outward relations; but the imagination is often stimulated into its wildest fancies by the former, while the restraining influence of the latter is withheld. All the mental faculties are modified in their activity by sleep, because by it a different relation is established. When the mind is sound and the body awake, impressions from without have the controlling influence; but when asleep, the intellectual operations are stimulated by internal influences, or impressions from the affections or feelings,—consequently, a different result must be expected. It appears at least probable that intellectual operations induced by internal causes, are not, under any circumstances, the objects of memory to so great a degree as those produced by external objects. Certain it is that, during that stage of sleep in which the external senses are in abeyance, we know that from internal causes, there is excessive action in the mental organ, without

leaving any impression upon the memory. For example, we refer to voluptuous orgasms in sleep, in which, should the excitement be so exalted as to arouse any of the senses, memory retains the circumstance as a dream; but when the exaltation does not reach that pitch, the mind has treasured nothing of the occurrence. Yet in such instances the evacuation is incontestable evidence that mental action did exist, and that the mind was not asleep. Vigorous activity of a propensity or sentiment will stimulate the intellectual faculties to originate mental pictures to gratify the original desire; and in these cases the mental operations are not only diversified but intense—involving the greater part of the mental powers."

We would suggest whether seminal emission during sleep is always the consequence of voluptuous dreams; and, as it certainly is not, this illustration of Dr. F. falls to the ground.

Even admitting as correct all that he contends for as to the connection between memory and external sensual perception, does it prove that the mind never sleeps—in other words, that the mental organs are incessantly in a state of activity? Can any one suppose that, during the entire absence of all consciousness which constitutes profound sleep, the mental faculties are still in exercise? It will not do to say that they appear to us to be dormant because we retain on awaking no memory of their operations; and that this want of memory is owing to the complete repose of the external senses. We will not say that the fact must be proved, for it is unsusceptible of proof either direct or analogical. We know that a state of profound sleep is a state of utter unconsciousness; that all the phenomena of existence save those which are within the domain of the nerves of organic life, and a few reflex actions, temporarily cease. Now is it to be supposed that in such a state as this the operations of mind go on, even in a modified degree or manner? We infer that the mental organs as well as the animal, demand an alternation of repose and action—that sleep is as necessary to the one as to the other, from the fatigue which invariably ensues from too prolonged mental efforts—and from the fact that constant mental activity is known to be incompatible with the health and integrity of the brain. But there are different degrees of sleep. With a perfect interruption of any conscious relation to the external things by which we are surrounded and the circumstances in which we are placed, certain of the mental faculties may be in action; by these mental images may be revived, varying according to the portion or portions of the brain which may at the time be active, sometimes producing simple and congruous images, but at others a more absurd, incongruous, and impossible succession of mental phantasmagoria than almost the wildest imagination could conjure up during a state of wakefulness. In many cases, images are awakened in the mind during sleep by external impressions upon the half dormant senses, without external consciousness being aroused; nay, even the voluntary muscles may be put in action and the sleeper made to walk and to perform many of the ordinary acts of life through the agency of mental images, while external consciousness is still dormant.

In what are properly termed dreams, the reasoning faculties are never active. We never in our dreams attempt to compare and arrange the discordant images which dance before the mental vision. The most absurd and incongruous positions in which, while dreaming, we appear to be thrown; the fantastic shapes which surround us; the rapid change of scene; the annihilation of time and space, never excite in us the least surprise. Reason never asserts her province and resolves into its true elements this "baseless fabric of a vision." We never reason in our dreams. But we experience fear, horror, disgust, pleasure, and, contrary to what should be the case if Dr. F.'s views in relation to memory were all correct, we recollect the sensations in connection with our dreams when we awake. It is true that we sometimes feel conscious of having dreamed, without being able to recall any of the imagery of our dreams; because the activity of the mind was so slight, that it did not reproduce vividly the images of which the dream was composed.

We admit that, in the absence of external consciousness, whilst the external senses are inactive, heeding not their appropriate stimuli and conveying no

impression to the brain, the whole of the intellectual powers may be in active operation—that the mind may reflect and reason. It is in such a state of mental abstraction that the philosopher weighs and compares his facts, and on them builds his theories; it is in such a state the poet creates his ideal world and peoples it with "beings which had no corporeal birth;" and it is in such a state the painter forms those images and scenes he afterwards produces on the canvas. But it would be incorrect to call such a state one of sleep in a proper physiological sense. In sleep, we never reason, and the images then formed, if we were to attempt to describe them in verse or transfer them to the canvas, we should find to be, as Dr. Parr remarks, "a thing of shreds and patchwork, composed of the heterogeneous and disjointed vestiges of ideas previously received through our senses."

We had intended to notice the illustrations of his subject which Dr. F. has drawn from the subject of mesmerism; but we must now pass over this part of the essay, with the sole remark that our belief in the reported wonders wrought by mesmeric influence falls very short of that professed by him. We cannot believe, we have certainly seen no fact calculated to prove to us, that mesmerism, or, as Dr. F. denominates it, *animal magnetism*, "holds a controlling power over both mind and body."

While we deny that the mind is active during sleep, or that memory has control only over the images derived through the external senses; still we would remark that, admitting the inaccuracy of both these propositions, they but slightly impair the correctness of the views advanced by Dr. F. in reference to the *phenomena* of dreaming, for here it is true that a portion at least of the mental functions are active, while the external senses in common with the organs of animal life are dormant. D. F. C.

ART. XX.—*Notes of a Recent Visit to several Provincial Asylums for the Insane in France.* By JOHN WEBSTER, M. D., F.R.S., Fellow of the Royal College of Physicians, Consulting Physician of St. George and St. James's Dispensary, &c. London, 1850: pp. 35.

THIS interesting pamphlet is the production of a distinguished member of the medical profession, whose writings are well known in this country, and who has devoted much attention to mental diseases, and been particularly interested in preparing the public mind for a much larger amount of clinical instructions in institutions for the insane than has been heretofore permitted in any part of Great Britain. In the prosecution of this object, he has made several visits to the French hospitals, and in the paper before us, which was originally published in the "*Journal of Psychological Medicine*," he gives a highly interesting account of his last tour, and a large amount of information, in reference to many of these institutions, not to be found elsewhere in so small a compass. The present report has reference only to eight provincial asylums, while those in Paris, which are most generally known, are referred to only cursorily.

The asylums visited will be briefly referred to. First in order is that of *Bon Sauveur at Caen*, which, besides being an asylum for lunatics of both sexes, is a religious establishment, containing a large population which is thus officially noticed. 1. The choir and lay-sisters, consisting of two hundred and thirty-seven individuals. 2. There are five priests, composed of the superior and four chaplains. 3. Twenty-six free boarders, all resident; twenty being ladies, and six gentlemen. 4. The deaf and dumb, of which there are one hundred and fifty-five, comprising sixty-five males, and ninety females. 5. The resident domestics amount to one hundred and twenty-eight, of whom sixty-eight are males, and sixty females. And lastly, six hundred and ninety-two lunatics, of whom three hundred and two are men, and three hundred and ninety women. Besides these, there are also two physicians, and eighty new resident work people; so that one thousand three hundred and twenty-five individuals actually belong to this great establishment.

St. Meens Asylum near Rennes, with a fine situation, has an old building not constructed for, or adapted to, the purpose for which it is now used. "Even the best part looks more like a prison than a lunatic institution, having strong iron bars in the windows," and in other respects not suitable for the reception of the insane. During the year 1849, ninety-one patients were admitted, thirty-seven were discharged cured, and forty-nine (twenty-one by cholera) died. When visited by Dr. Webster, there were three hundred and eleven patients in the house, of whom one hundred and forty-three were men, and one hundred and sixty-eight women.

Nantes Asylum forms one division of the "Hospice Général" of the city of Nantes, and although the arrangements of the buildings appropriated to the insane are considered admirable by Dr. Webster, one of the best indeed throughout France, he regards the situation as highly objectionable. The total population at the time of his visit comprised one thousand one hundred and ninety-six individuals, viz., 1st. One hundred and ninety insane old men, and two hundred and sixty-five women of the same description. 2d. Twenty-five deaf and dumb persons. 3d. Fourteen male and female boarders. 4th. One hundred and sixty-one orphans or foundlings. And lastly, three hundred and ninety-one lunatics; to which must be added, one hundred and fifty individuals who compose the staff of officers. During the year 1849, one hundred and twenty-six patients were admitted, fifty were discharged cured, and one hundred (sixty-one by cholera) died.

St. Gemmes Asylum, near Angers, is built upon a rock close to the Loire, above three miles from the city of Angers, and is appropriated exclusively to lunatics. When certain improvements now in progress are completed, Dr. Webster believes this "will become a first-rate institution." This asylum differs from the others noticed in having the resident physician the superintending director; and, as might be expected, the discipline pursued was much better than in the establishments having a different organization.

In the asylum were three hundred and forty insane; one hundred and sixty-one being males, and one hundred and seventy-nine females. During the year 1849, one hundred and twenty-six patients were admitted; seventy-one were discharged cured, and seventy (sixty-two by cholera) died.

The *Asylum at Le Mans*, "of all the public establishments for the insane recently visited" by Dr. Webster, "gave him the most satisfaction." This asylum contains two hundred and fifty-eight patients; one hundred and twenty-four males, and one hundred and thirty-four females. During the year 1849, seventy-four patients were admitted, thirty-five were discharged cured, and sixteen (none of cholera) died. This institution has only one physician, who resides within its precincts, and gives his time and exertions solely to the duties of his office.

Asylum at Blois. This institution is not yet completed, but will ultimately accommodate three hundred and fifty insane patients. Its general plan somewhat resembles that at Le Mans. During the year 1849, eighty-six patients were admitted; twenty-three discharged cured, and fifteen ("several" of cholera) died. The actual number in the asylum, when visited by Dr. Webster, were one hundred and twenty-four; sixty being expected to arrive in a short time, and for whom the directors were already prepared. The resident physician is also director, and labour is here used as a remedy to an extent far beyond what is common in other institutions, without any accident having ever occurred.

The *Orleans Asylum* is situated in the city of Orleans, and so surrounded by houses on almost every side that from many of their upper windows conversation can be held with the patients in the court-yards below. It is a part of a general hospital, the entire community being composed of, 1st. Three hundred and ten paupers. 2d. A civil hospital with three hundred patients. 3d. Eighty orphans. 4th. A receptacle for diseased "filles publiques." 5th. The lunatic asylum containing five hundred and twenty-one patients. The total population, including resident official and domestics, amounted to one thousand five hundred and fifty individuals. During the year 1849, one hundred and thirty-seven insane patients were admitted; thirty-one were discharged cured, and ninety-three (thirty-two by cholera) died.

Saint Yon Asylum is near the city of Rouen, the ancient capital of Normandy,

and is reported by Dr. Webster as being not only one of the largest, but also one of the best conducted in France. It contains seven hundred and twenty-nine insane patients, of whom two hundred and sixty-one are males and four hundred and sixty-eight females. During the year 1849, two hundred and four patients were admitted; seventy-six were discharged cured, and one hundred and nine (thirty-three of cholera) died. As seem to be the tendency even when the wards of this institution were most inconveniently crowded.

No one can read this report of Dr. Webster without being struck with the frequent mention made of the noisy and excited state of the female patients, and not less so with the large amount of restraining apparatus now in use in nearly every institution which he visited. In the eight Provincial asylums visited by Dr. Webster, in 1850, and which contained a total insane population of three thousand three hundred and sixty-six, he found one hundred and sixteen under restraint, and of these the proportion of females was considerably greater than of males.

The great progress made in France, within a few years, in reference to the nature, pathology, and treatment of mental diseases, is referred to with commendation, and the regret which we have often felt is fully participated in by Dr. Webster, that of all the regular reports made by the physicians of the various asylums in that country, few if any are printed, but, "like many other public papers, become buried in the archives of the prefectures," the minister's bureau, or consigned to unmerited oblivion in some similar receptacle. It must also be quite obvious, from the details given of the medical staff in most of these institutions, that the physicians who devote their time and talents to these institutions, are not liberally or at all adequately paid for their services, while in not a few there is no proper provision made for the requisite number of medical officers.

Dr. Webster's familiarity with institutions for the insane makes his remarks in reference to the general mode of treatment, and especially in reference to the necessity and effects of restraining apparatus, interesting and valuable. He believes, as we do, and illustrates the truth of his belief from statistical facts, that the frequent use of restraint tends rather to increase than diminish noise, violence, accidents, escapes, and even suicides.

The importance of giving some amount of clinical instruction on insanity is generally recognized, and Dr. Webster's observations lead him to believe that no objection exists to such a course in large pauper institutions, and that no more injury would result to the patients from a class of students passing through the wards of such institutions devoted to the insane, than through those of a female hospital.

The study of mental diseases is obviously too much neglected by medical students in Great Britain no less than in this country, and Dr. Webster, in addition to a very pleasing sketch of his foreign tour, has furnished us with a large mass of valuable facts, and a strong argument in favour of this kind of clinical instruction, which cannot fail to be read with interest by the members of the medical profession.

T. S. K.

ART. XXI.—*A Practical Treatise on Dental Medicine, being a Compendium of Medical Science as connected with the Study of Dental Surgery.* By THOS. E. BOND, A. M., M. D., Professor of Special Pathology and Therapeutics in the Baltimore College of Dental Surgery. Philadelphia, 1851: pp. 324.

AMERICAN dentistry is doing everything which the severest criticism can require to establish its claims to the rank of a distinct speciality of medicine. The number and value of its periodicals; the rapid succession of new standard and elementary works which as journalists we have occasion to notice; and the regular and steady increase of its collegiate foundations, challenge for our brethren in this department of the healing art the highest admiration and praise.

The profession styled itself Dental Surgery, while its pretensions were yet limited almost exclusively to the operative and artistic treatment of its subjects; and the earlier books and publications were chiefly occupied with mechanical and chirurgical remedies and appliances; but enlarging experience and deepening reflection in good time liberalized the science, and discovered its broad and general relations to all the departments into which the healing art has been divided for convenience of study and practice.

This book of Dr. Bond is, we believe, the first work published in which the therapeutics proper of dentistry has been systematically separated from its surgery, and recognized and treated in reference to this distinction. It is, at least, from that side of the subject, and by an author, not a practical dentist, but a public teacher of hygiene, pathology, materia medica, and medical practice in their application to the profession. Dr. Bond is specially qualified for this service, and in the book before us, has performed it happily.

The etiology, symptoms, diagnosis, and nature of disease are treated in as many chapters, upon the received principles of medical science and medical practice, in reference to the special topics of his work, with great clearness and ability. Particularly, there are about fifty pages occupied with the morbid effects of dental disease upon the general system, which make the work of the highest value to the general practitioner, and show how large a service the dental surgeons have already rendered to general medicine both in diagnosis and remedial practice. Indeed the work so well performs its double duty to dentist and physician, that we are at a loss to say which is the more indebted to the author for its publication; nor need we, for both need it, and to both we warmly recommend it. We spoke above of Dr. Bond's separation of the medicine from the surgery of dentistry. This must be qualified a little, for he does not *rigidly* observe the distinction which he so evidently feels, and feels perhaps the more that he is not himself a *surgeon* dentist in the strictness of the title. For ten years he has filled the chair of dental pathology and therapeutics, and now contributes nobly by this publication to the stock of knowledge proper to his department; but he has also given a dozen chapters of his work to diseases and treatment of the teeth and their dependencies, which are strictly *surgical*. We make no objection to this, for there are probably good reasons for embracing these chapters in his plan, and his method involves no confusion; but we respectfully suggest, for the consideration of our author in future editions, that a severely scientific division of the several departments of the profession is the step now required for its advances and growth. Nothing is so necessary in the cultivation of science as correct classification. Mental, like chemical analysis, must separate its subjects into their simple elements, before it can fully comprehend or command them. There is a stage of progress which demands exactitude of system and precision of nomenclature, and dentistry has reached it. We have spoken, or intended to speak, heartily in praise of Dr. Bond's work. It has unmistakeable excellence of thorough medical science in its subject matter, and of capital authorship in its style and treatment, and the suggestions which we take leave to offer to our author in no respect abate our admiration for him or his performance. We would have been glad to find a chapter *distinctly* and *generally* devoted to constitutional irritation, shocks and sympathetic affections connected with diseases of the teeth, extractions and other operations, and such mischiefs as may result from the various modes of filling teeth, shutting up exposed membranes by capping or otherwise, amalgam fillings, &c. &c. The use of chloroform and other anæsthetic agents deserved also, we think, a chapter in a treatise by an author whose position and ability would have given his opinions and instructions so much deserved weight with practicing dentists. Beside these things, which in substance and form concern the interests of dentistry, there is one error which requires correction, for the sake of professional equity and even-handed justice to the living and the dead. In the article upon "amputation of the lower jaw," at page 275, Dr. Bond correctly credits Dr. Mott with the honor of being the first surgeon who amputated the lower jaw at the articulation; but he quotes Dr. Rees, without correction, for the assertion that after Dr. Mott, who operated in 1821, except M. Cusack, of Dublin, the operation was not "performed by any others

until 1842." We have before us "Cooper's First Lines of the Practice of Surgery," in which a detailed statement of the operation, as performed successfully by Dr. Geo. McClellan, of this city, in 1823, is given; accompanied with a handsome engraving of the appearance of the patient before and after the operation, and of the jaw and tumour which were removed.

Dupuytren, as early as 1812, exsected a portion of the under jaw, and Dr. Deadrick, a surgeon of Tennessee, was two years before him in the same bold operation. Originality in surgery, in medicine, is not always easily ascertained, nor is it worth quite all the fighting which it has occasioned; but justice ought to be done as nearly as it can be, in all cases. Some editors and annotators have taken so much pains to depreciate their rivals and cotemporaries, that unsuspecting writers who follow them are sometimes unconsciously made to repeat the injustice which they would not willingly commit. Dr. Bond has been cautious enough to give his authorities for his statements, and so made *them* responsible for their truth. We make room for the following extract from the work which we have been noticing, and give it for its valuable hints to practicing physicians, and as a specimen of our author's style of treating his subject. "That diseased conditions of the teeth and the structures adjacent to them, do exert a most pernicious influence upon the general health, is a fact as well established as any other medical observation; yet the medical profession are, with very few exceptions, entirely unaware of it. We are not apprised that the subject is ever alluded to by lecturers on the practice of physic, when recapitulating to their classes the causes of functional disturbance and constitutional suffering; it is not noticed in the many text-books in practice; and, certainly, however frequently the physician may look into the mouths of his patients, it is very rarely that his comprehensive glance perceives anything worthy of note in the decaying organs of mastication. It is full time that practitioners of medicine should perceive the importance of the teeth and of their diseases; but, until they do so, it is the more important that the dentist should be able to point out the causes of obscure disease, which the physician has in vain endeavoured to discover, simply because he has sought for it everywhere but in the right place. It might be granted, *à priori*, that, if physiological conditions of the teeth, owing to their peculiar position, association, and history, may exercise powerful influence upon the health of other organs, pathological conditions of these same teeth cannot be entirely harmless. Again, if we would examine the structure of a tooth, and perceive how completely its sensitive part is enclosed in an unyielding bony case, we might readily infer, from the consequences of compression in other parts, that the swollen and inflamed pulp, &c., would be exceedingly painful. If, too, we would regard the close connection existing between the teeth, the rapidity with which the flash of sympathetic pain darts along the nervous cords which vitalize them, and the intolerable and protracted suffering which ensues upon even trifling irritation of these sensitive filaments, and remember that pain itself is fully capable of deranging the whole economy, and inducing serious and fatal disorder, we might, without the aid of much reflection, adopt the very rational conclusion that the diseases of the teeth must be of considerable consequence to the entire organization. We might, also, with similar propriety, conclude that the teeth were not made merely for ornament, and that mastication and insalivation are something more than mere forms of introduction to the stomach; that they are important to digestion, which is important to the entireness of organs and the performance of function; and that if mastication, and the insalivation accompanying it, be imperfectly performed, some corresponding imperfection of digestion must result. We might also infer, from the known consequences of long-continued morbid influences, however unimportant in their immediate action, that disturbance of digestion constantly repeated, must, in time, develop evils of a serious character." E. T.

ART. XXII.—*Address before the American Medical Association, at the Anniversary Meeting in Cincinnati, May 8th*, 1850. By JOHN C. WARREN, M. D., President of the Association. Boston, 1850: 8vo. pp. 65.

THIS address is elevated in tone, and replete with useful information. Such would be expected in any production by its venerable author. The late President of the Association is, indeed, one of the brightest ornaments of our profession at the present day; a distinction to which he is fully entitled not only from his numerous and brilliant achievements as a surgeon, and the important contributions he has made to the improvements of our art, but also from the faithfulness with which he has invariably upheld the dignity and standing of our calling, and the bright example he has set of illustrious character. Arrived now at an age when most men seek repose, he still labours with all the zeal of youth for the advancement of our science, and incessantly occupies himself with laying open to his brethren the rich fruits of his long and ripe experience.

"Standing, as I do," remarks Dr. Warren, "on the verge of professional life, and quitting perhaps the last official station I may be called upon to occupy, I naturally turn back to survey the course I have passed through, with a view to discover whether there is anything in it which may be interesting and profitable to those who are to follow."

Influenced by this noble and liberal sentiment, the author gives us graphic sketches of the eminent men he has met with during his professional career, comprising most of those who have shed lustre on our science during that period, and concludes his address by notices of the principal improvements in Medicine in the latter years of the last half century—the microscope, lithotrity, tenotomy, cold water, and ether.

We earnestly commend this address to the attention of the profession.

ART. XXIII.—*New Remedies, with Formulæ for their Administration.* By ROBLEY DUNGLISON, M. D., Prof. Inst. Med. &c., in Jeff. Med. Coll. Sixth edition, with extensive additions. Philad., Blanchard & Lea, 1851: 8vo. pp. 755.

THE fact of this work having gone to a sixth edition affords sufficient evidence that it has been acceptable and serviceable to the profession. It indeed comprises a vast amount of highly useful information, compiled from various sources, and most of which is not accessible to the mass of physicians. The present edition has been carefully revised, and largely augmented by the numerous additions made to our therapeutic agents within the period that has elapsed since the publication of the previous edition.

"The last few years," the author remarks, "have been rich in valuable gifts to Therapeutics; and amongst these, ether, chloroform, and other so called anæsthetics, are worthy of special attention. They have been introduced since the appearance of the last edition of the '*New Remedies.*' Other articles have been proposed for the first time, and the experience of observers has added numerous interesting facts to our knowledge of the virtues of remedial agents previously employed. To include all these, it has been necessary to add very greatly to the dimensions of the present edition.

"The therapeutical agents now first admitted into this work, some of which have been newly introduced into pharmacology, and the old agents brought prominently forward with novel applications, and which may consequently be regarded as *New Remedies*, are the following: Adansonia digitata, Benzoate of Ammonia, Valerianate of Bismuth, Sulphate of Cadmium, Chloroform, Collodion, Cantharidal Collodion, Cotyledon Umbilicus, Sulphuric Ether, Strong Chloric Ether, Compound Ether, Hura Braziliensis, Iberis Amara, Iodic Acid, Iodide of Chloride of Mercury, Powdered Iron, Citrate of Magnetic Oxide of

Iron, Citrate of Iron and Magnesia, Sulphate of Iron and Alumina, Tannate of Iron, Valerianate of Iron, Nitrate of Lead, Lemon Juice, Citrate of Magnesia, Salts of Manganese, Oleum Cadinum, Arsenite of Quinia, Hydriodate of Iron and Quinia, Sanicula Marilandica, and Sumbul."

It will thus be perceived that the additions to the present edition have not only been numerous, but important, and to increase the practical value of the work to the therapeutical inquirer, the author has added to the index of diseases the particular pages in which the various remedies prescribed in those diseases are referred to.

ART. XXIV.—*On Diseases of Menstruation and Ovarian Inflammation, in connection with Sterility, Pelvic Tumours, and Affections of the Womb.* By EDWARD JOHN TILT, M. D., &c. &c. New York, Saml. S. & Wm. Wood, 1851: 12mo. pp. 286.

WE have so recently recorded our favourable opinion of this work (see No. of this Journal for Oct., 1850, p. 401 *et seq.*) that it will be sufficient, on the present occasion, to announce its reprint in this country, and to recommend it to all who are interested in the subjects of which it treats.

ART. XXV.—*First Principles of Medicine.* By ARCHIBALD BILLING, M. D., A. M., F. R. S., &c. &c. Second American, from the revised and improved fifth London edition. Philad., Lea & Blanchard, 1851: 8vo. pp. 246.

FEW medical works have been received with greater favour than that, the title of which heads this article. It has gone through five editions in England and two in this country, and is now recognized as one of the classics of our professional literature. It is sufficient, under these circumstances, to state that the present edition has been carefully revised by the author, who has profited by the criticisms he has received, and endeavoured to render the work more worthy of the patronage of the profession.

ART. XXVI.—*Review of Chemistry for Students, adapted to the Courses as taught in the principal Medical Schools of the United States.* By JOHN G. MURPHY, M.D. Philadelphia, Lindsay and Blakiston, 1851: 12mo. pp. 328.

THE above work purports to be an aid to the student of medicine in reviewing the subject of chemistry, for the purpose of refreshing the memory in the elementary and important points, and not as a substitute for more elaborate treatises, or as a text-book to accompany a course of lectures on this branch. The author, having experienced the difficulties which meet the medical student under these circumstances, desires to lighten his labour, and offers an abbreviated treatise, comprehending the principal facts in relation to the elementary bodies and their most important compounds. This the author has accomplished in a satisfactory manner, and the student will no doubt find his advantage in embracing the opportunity offered of lessening labour and saving time, especially at periods when the review of all the branches taught in the schools makes this latter a point of considerable importance. In thus noticing favourably the scope of the work and manner of its general execution, it still is necessary to

allude to points of minor importance, which the author, perhaps from want of practice, has allowed to escape his attention. These are principally in the use of symbols, in which no error or difficulty could arise to the advanced student, but it might produce some confusion in the mind of the beginner, by whom this work would perhaps be used as a text-book, although such is not the design of the author. Thus the typographical errors Co_2 So_2 So_3 have been allowed to stand for CO_2 SO_2 SO_3, and the symbol Pt. has been adopted without any mark of distinction to express proteine, the same symbol having been previously used to signify platinum. These are, however, so few in number, as not materially to affect the value of the work as a whole, or to detract from the favourable opinion previously expressed of its utility as an assistant, under the circumstances in which it is designed to be used. R. B.

ART. XXVII.—*The Uses and Abuses of Air; showing its Influence in sustaining Life, and producing Disease; with remarks on the Ventilation of Houses.*

THIS is a very neat duodecimo of about two hundred and fifty pages, prepared for popular use, and published by J. S. Redfield, of New York, in his series of "*Tracts for the People.*" It is filled with interesting and practical information upon the important topics of the relations of food and air to our bodies, and the great advantages resulting from a knowledge of these, in order to secure that greatest earthly desideratum, health. The numerous coloured illustrations, exhibiting apartments with the means of warming and ventilating, add greatly to the value of this excellent little treatise, which deserves the most extensive, circulation. G. E.

ART. XXVIII.—*Consumption of the Lungs, or Decline; the Causes, Symptoms, and Rational Treatment, with the means of Prevention.* By T. H. YEOMAN, M. D. Revised by a Boston Physician. Boston & Cambridge, J. Monroe & Co., 1850: 12mo. pp. 103.

THE nucleus of this small volume was, we are informed by the author in his preface, a series of papers published in 1847 in a London periodical of considerable circulation. The essay comprises a concise but very sensible sketch of the general history, course, and terminations of tubercular phthisis—the habits and conditions of life which tend to develop or to arrest it; together with an account of the treatment that has been found, by experience, most useful for the control of certain of its symptoms, and best adapted to check its onward and fatal course.

There is scarcely anything to be objected to in the views advanced by Dr. Yeoman in reference to either of the points embraced in the present essay. He has not taken up his pen for the purpose of promulgating any novel doctrine as to the nature or cause of the disease—nor to advocate any special mode of treatment or particular remedy for its cure or prevention. He has merely presented a plain, sensible *resumé* of what the results of investigation and experience have taught us in regard to the pathology, etiology, prophylaxis, and management of tubercular phthisis, and as such it may be read with interest, and we are convinced with some profit, by the medical student and junior practitioner. The work, however, is too concise and limited in its details to afford all the information in relation to the important disease of which it treats required by the physician to enable him to arrive at a correct diagnosis in the early stages of phthisis, or to determine upon the proper course of medication or regimen demanded by each particular case that may present itself for his judgment. The treatise was not, in fact, intended for the use of the profession—but for the instruction

of the general reader. We very much doubt, however, whether as a popular work it is calculated to do much good. It is questionable whether the few predisposed subjects its sound hygienic precepts may save from the occurrence of an attack of consumption, or the still fewer patients in whom the disease has already developed itself, the very sensible remedial measures laid down by the author, shall guard, for a time, from its rapid progress, will compensate for the actual mischief it is calculated to inflict upon the non-professional reader, by leading him into the vain belief that he can detect, with certainty, in his own person, or in the members of his family, the primary stage of so insidious a disease as pulmonary phthisis—or translate, with sufficient accuracy, the true import of each symptom as it develops itself, so as to resort with safety and effect to the remedies—medical or hygienic—which it calls for. It will be very apt to lead one class of its readers into a fatal security as to their actual freedom from pulmonary tuberculosis, and unnecessarily to alarm another class by inducing in them the belief that they are actually its subjects, when such is not the case.

If to succeed in the practice of medicine—that is, in the proper adaptation of the principles of pathology and therapeutics to individual cases—requires not only that years should be spent in the acquisition of those principles, and their clinical application, but habits of close application, educated with particular reference to diagnosis and the application of remedial agents to arrest the progress of disease, or to control its leading symptoms in the special cases and circumstances under which it may present itself, it must be evident that any attempt to teach, by popular treatises, the domestic management of any disease must necessarily be a failure, if it do not lead, in too many instances, to prejudicial and even fatal results. D. F. C.

Art. XXIX.—*An Appeal to the Public in behalf of a Hospital for Sick Children.* London, 1850.

This is a very strong appeal, and we trust it will prove to be a successful one, in favour of an institution, the want of which, in any large town, is a glaring deficiency in the list of its medical charities, and must of course be eminently so in so large and densely populated a city as London.

From the investigations of a committee of the Statistical Society, it appears that the whole number of children under 10 years of age, in all the hospitals of London, in Jan. 1843, was only 136, and, of even this small number, 41 had been admitted in consequence of accidental injuries, and 69 for surgical treatment, so that only 26 were suffering from internal diseases. When it is remembered that more than one-third of the whole population of London are cut off during infancy and childhood, it must be manifest that much misery results and many lives are lost for the want of such a charity as the one proposed. Such an institution would not only afford comfort to the poor and prolong their lives, but, by affording the means of instruction to the student, and furnishing opportunities for extending the boundaries of our knowledge concerning a class of diseases, frequent in their occurrence, dangerous in their character, and often very obscure in their symptoms, its benefits would be extended to the highest as well as to the humblest classes of society.

Would our limits permit, we could easily show that the objects desired can only be attained by the foundation of a hospital exclusively devoted to the treatment of children; for the diet, the treatment, the nursing, the hours to be observed, and some of the hygienic requirements, are different from those suited to a hospital for adults.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Weight of the Brain at different periods of Life.*—The *London Journal of Medicine* for February of the present year contains the results of some interesting recent investigations on this subject by Thos. B. Peacock, M. D. The author gives the following tables of the average weight of the brain at different ages:—

Average Weight of the Brain at different periods of Life in Males.

Ages.	Numbers weighed.	Average weight. oz. dr.
1 to 2 years	3	39 7
2 to 3 ..	4	44 1
3 to 5 ..	6	44 13.16
5 to 7 ..	4	45 4.25
7 to 10 ..	6	46 14.33
10 to 15 ..	13	47 15.2
15 to 20 ..	11	49 5
20 to 25 ..	21	50 13.9
25 to 50 ..	123	50 3.8
50 to 90 ..	53	48 9.4
	244	

Average Weight of the Brain at different periods of Life in Females.

Ages.	Numbers weighed.	Average weight. oz. dr.
1 to 2 years	3	31 1.3
2 to 3 ..	9	37 5
3 to 5 ..	4	41 0.5
5 to 7 ..	5	41 4
7 to 10 ..	2	40 6
10 to 15 ..	3	40 10.06
15 to 20 ..	18	45 4.1
20 to 25 ..	15	46 1.8
25 to 50 ..	69	45 0.6
50 to 90 ..	23	43 0.3
	151	

"The extreme range," Dr. P. observes, "in the weight of the encephalon of the adult male is from 34 oz. to 62 oz. 12 dr., the number of brains weighed having been 197; and in the adult female the range is from 36 oz. 12 dr. to 54 oz., the number weighed having been 107."

1. The average weight of the encephalon of the adult, as calculated from Dr. Peacock's observations, is, in males, 50 oz. 6 dr.; and in females 44 oz. 7½ dr. Dr. P.'s previous observations* gave an average of 50 oz. 3 dr. for the weight of the encephalon of the adult male, and of 44 oz. 14 dr. for that of the female. A similarly close correspondence will be observed on comparing the respective average weights of the several portions of the brain, as deducted from the two series of observations.

2. The observations now published show, with little exception, an increase of weight in the brain up to the period of adult age, but they are too few to satisfactorily illustrate this point. The tables compiled by Professor Reid,† that drawn up by Dr. Boyd‡ from a very extended series of observations conducted at the St. Marylebone Infirmary, and the tables in Dr. P.'s former communication, founded upon the united observations of Dr. Reid and himself, have so conclusively established the fact that the brain does not attain its full development till from twenty to twenty-five years of age, says Dr. P., "that I should not have thought it necessary to insist upon it, had not Sir W. Hamilton§ recently repeated, as fully established, the opinion which he formerly expressed,‖ that the Wenzels¶ were correct in stating that the brain attained maturity at or before the age of seven." To illustrate, therefore, the law of development of the brain, Dr. P. has calculated the whole of the observations of Professor Reid and himself.

By these tables it is shown that the average weight of the brain increases up to from twenty to twenty-five years of age.** During middle life, or from twenty-five to fifty years of age, it retains about the same weight, and in after-life it declines considerably. It is true that some exceptions will be found to this rule among the separate observations, but though it occasionally happens that the brain of a young person may be found to equal or exceed in weight the average of adults of the same sex, such exceptions do not frequently occur, and can then only be ascribed to the organ having attained premature maturity, or, most generally, to the mode in which death has occurred. In cases where there is much obstruction to the circulation through the lungs during the last periods of life, the brain is found very much engorged, and though great care be taken to deprive it of the blood, it will still weigh heavier than if death had taken place under different circumstances. Thus it is that the brains of persons who have died shortly after the receipt of extensive burns, or in the collapsed stage of cholera, are found to be unusually heavy. Generally also persons who have died of acute diseases have heavier brains than those who have long suffered from exhausting causes. To obtain, therefore, unexceptionable results, it would be necessary to calculate the average weight of the brain in persons who have died under precisely similar circumstances, and in observations so framed I am satisfied that the exceptions to the general rule would be very rare.

Sir W. Hamilton†† states that he has "established, apart from the proof by averages, that the human encephalon does not increase after the age of seven at the highest. This has been done by measuring the head of the same young person from infancy to adolescence and maturity: for the slight increase in the size of the head after seven (or six) is exhausted by the development to be allowed to the bones, muscles, integuments, and hair." It is, however, evident that this method of investigation can show only the period at which the brain attains its greatest bulk, and not that at which its development is completed; for every practical anatomist is familiar with the fact that the density of the brain varies greatly at different periods of life. Calculations of the average

* Edinburgh Monthly Journal of Medical Science, vol. vii. pp. 101, 166. 1846.
† Edinburgh Monthly Journal, vol. iv. 1843.
‡ Wagner's Physiology, translated by Willis. 1844. Appendix, p. 700.
§ Edinburgh New Philosophical Journal, Jan. to April, 1850, p. 330.
‖ Monro's Anatomy of the Brain. 1831.
¶ De penitiori structura cerebri Hominis et Brutorum, p. 267, fol. Tubing. 1812.
** In Dr. Boyd's Table, the weight, both in males and females, is greater at from 30 to 40 years than at any other period of life.
†† Edinburgh New Phil. Journ. January to April 1850

weight of the brain afford the only means by which we can ascertain the period at which its full development is attained, and the changes which it undergoes during the progress of life.

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2. *Anatomy of the Subcutaneous Bursæ.*—Mr. Wm. Coulson gives (*London Journ. Med.*, Jan. 1851) the following description of the subcutaneous bursæ. These are situated in various parts of the body immediately beneath the integuments, of which they are an appendage. They are connected with, and belong to, the subcutaneous cellular adipose membrane, being in no instance continuous with the deep bursæ, or with the tendons, muscles, or bones, which they protect. The structures composing them are, first, the capsule itself; secondly, certain filaments traversing it; thirdly, folds, or septa, being reduplications of the inner membrane, and these may be either partial or complete; and fourthly, small adipose corpuscular fringes. There is, also, the peculiar fluid secreted by the interior of the sac. In respect of their being shut sacs, intended to facilitate motion and to protect opposing surfaces, and as regards also the fluid they secrete, these bursæ have analogies, no doubt, with the deeper bursæ. In the more perfect synovial capsule of the knee-joint, for example, we not only find a shut sac, but septa forming the alar ligaments; being nearly analogous to the septa of the subcutaneous bursæ. Nor does the analogy stop here, seeing that we find the alar ligament so fully developed in some animals as to divide the knee-joint into two cavities—thus converting it from a unilocular into a bilocular sac: this happens in many of the superficial bursæ. The subcutaneous bursæ vary somewhat in form, and even, perhaps, a little in their structure. In the axilla, for example, where they have, probably, the simplest form, they resemble the cells of a bee-hive piled on each other. In the order of simplicity of structure, those of the groin follow. The mode of formation of these bursæ in the fœtal state illustrates, I think, their varieties in the adult. For we find, sometimes, that the cellular tissue, in no way modified, takes the place of a properly developed bursæ; and this is exactly what happens up to the fifth month of fœtal life. At other times, in the adult, we find them small, but perfect; showing that their development has been arrested. Even the anconal bursa, viewed by Schreger as the most perfect, has been found, by other anatomists, small, contracted, or scarcely perceptible. Pathological changes also, by altering the condition of these bursæ, reduce them to the tissue, out of which they were formed. Sometimes the interior is filled with a serous fluid, and the walls of the sac are thin, and almost pellucid; at other times they become soft, flaccid, porous, and reticulated, and lose their cohesion—clearly indicating a retrogression to their primitive condition.

The fluid secreted by, and contained within, these subcutaneous bursæ, is held by chemists to be an aqueous solution of albumen, combined with saline matters. The epithelium, common to all true articular synovial membranes, cannot be discovered, even with the aid of the microscope, in the lining membrane of these bursæ.*

It would seem that, prior to the second month of fœtal life, these bursæ are open. A remark applicable to the entire system I now describe is that in youth the capsule is thin and pellucid; as age advances, the bursæ become opaque and yellowish. Blood-vessels abound on the exterior of the sac. The inner surface of the dermoid segment resembles a serous membrane; the opposing surface, on the contrary, has a synovial appearance; that is, it is soft, pulpy, and as if covered with glistening elevations. But if these two surfaces differ, as has been alleged by Schreger, their secretions may also differ, giving a more complex character to the fluid than was at first supposed.

The subcutaneous bursa with which surgeons are most familiar is the one situated over the patella. This bursa, which may be called the patellar, is of

* Mr. Toynbee examined for me some fresh fluid, which I removed from a carpal bursa. He says: "The gelatinous matter from the bursa consists of a transparent, viscid, semi-fluid substance, interspersed through which are rounded and ovoid cells, containing granular matter, and having one or two transparent nuclei attached to their inner surface."

a globular, or rather oval shape, the base being usually limited by the extent of the bone. The walls of the sac, in contact in the healthy state, are bedewed by a fluid analogous to what we find in the ordinary cellular tissue of the body, performing, no doubt, the function of synovia; like that fluid, as has been already mentioned, it is an aqueous solution of albumen, combined with saline matters.

The patellar bursa belongs essentially to the superficial or subcutaneous system: it is exterior to the crural aponeurosis; and microscopic research, so much improved and extended of late years, merely confirms the accurate conceptions of Schreger. The epithelium investing the inner surface of the articular synovial membranes is not found in the interior of this or of any other bursa. The peculiar glistening fibres already described are found to stretch across at various points, forming septa or partitions, more or less complete. In many persons, two bursæ, and even three, have been observed developed over one patella, perfectly distinct from each other. This duplication or triplification of the bursæ is not confined to the patellar bursæ, but extends as well to others. My friend Mr. Ireland brought me, some time ago, a patient with a bursa of the size of a marble, situated over the right os magnum, which the patient wished to have removed. I dissected it entire, so that it rolled on the table: in three or four months afterwards, another bursa, as large as the one which had been previously removed, made its appearance in the same situation. Thus may be traced to an imperfect knowledge of the anatomy of these organs the theory of accidental bursæ. When a second bursa appears after the removal of the first, it is simply the enlargement of a second, coeval with the first, and observed then only for the first time by the surgeon.

In the popliteal space, we usually find three subcutaneous bursæ—an external, internal, and middle. The history of these is curious: with similar relations to all the others, they yet present, when enlarged, certain peculiarities. Both surfaces against which the enlarged bursa presses being comparatively soft and yielding, the swelling does not assume the distinct globular form which those situated over bones exhibit. A case of this kind came under my notice a few months ago. A young woman, æt. 32, applied to me, in July last, with a swelling in the right popliteal space, situated principally in the centre of the ham, and of the size of an orange, though more compressed. It was movable, free from any pulsatory movement, and, when firmly pressed, gave an elastic feel to the fingers. The integuments were very little changed in colour, and the swelling was free from pain. I entertained no doubt of its nature, and punctured it by means of a grooved needle, when an ounce and a half of a white gelatinous fluid, much resembling the vitreous humour, escaped; a compress was applied over the part, strips of soap plaster over this, and a bandage tightly over the whole. On removing the pressure at the end of a week, a re-accumulation of the fluid had taken place. The swelling was again punctured, and the fluid, which was much less than on the previous occasion, allowed to escape. The pressure was applied in the same way as before, and removed from time to time. No fresh accumulation took place, and at the end of two months she was quite cured. Schreger has described this bursa, but has given no drawing of it; he does not seem to have met with it in a diseased condition.

There is usually a distinct bursa over each malleolus; but the external malleolar bursa is the one most liable to be enlarged or distended with fluid. At one time it was thought that in club-foot an accidental bursa was formed, to protect the integument at the point of greatest pressure; but this notion has been distinctly refuted. A subcutaneous bursa, occasionally of considerable size, very generally exists over the distal extremity of the metatarsal bone of the great toe, close to the joint, and the term bunion has been applied to it when inflamed or thickened. Subcutaneous bursæ are met with over the trochanter major and tuberosity of the ischium, in the groins, and in connection with the lower part of the superficial fascia of the abdomen.

Bursæ of this kind exist also, as has been already mentioned, in the axillæ, and over the condyles of the humerus. An enlarged bursa over the inner condyle of the humerus came under my notice. C. W., æt. 18, applied to me on the 18th August, with a swelling over and a little above the inner condyle. As

the patient, a few days before, was stooping to raise something heavy from the floor, he first felt pain in the part, and shortly afterwards discovered a slight swelling. At first, it was like a small indurated gland, but it gradually increased to the size of a walnut. It was unattended with pain, and gave, on pressure, an elastic, indistinct fluctuating feel. On the 3d September, I punctured it, and there exuded about a tablespoonful of transparent gelatinous fluid. Firm pressure was applied, and removed from time to time, and the swelling has not returned.

The bursa, which we may call anconal, as situated over the olecranon, is well known, and is often enlarged. There is also one over the distal extremities of the radius and ulna, and one on the carpus, corresponding to the surface of the os magnum, which is often enlarged. A girl, 13 years of age, applied to me on the 7th September, with a swelling like a large marble, which had existed six months, and was situated on the posterior surface of the right carpus, over the os magnum. I punctured it with a grooved needle, evacuated a teaspoonful of white vitreous-looking fluid. Pressure was applied over the part, and renewed every week for three times. The patient is now quite well.

That bursæ in this situation may sometimes acquire considerable size is shown by the following case. E. F., æt. 30, applied to me on November 15th, on account of a large bursa over the os magnum, and a little to the radial side of it. About eight years ago, it first arose, from her husband pressing this part of her hand very hard with his knuckles—to use her own expression, by "his knuckling her." Immediately after this, a swelling commenced, and at the end of a twelvemonth it had attained the size of a walnut. It was then punctured, and near two teaspoonfuls of fluid were evacuated. No pressure was applied; the swelling disappeared until two years ago, since which time it gradually increased, till it reached the present size. The swelling prevented her from turning her hand back, and from wringing clothes. There was a great feeling of weakness in the joint, and occasional pain in and about the swelling, especially after exertion. On November 18th, I punctured it with a needle. As the case is still under treatment, I am unable to give the result: I feel no doubt, however, of its permanent dispersion.

There is a large bursa over the first joint of the thumb, and others, often double, over the first and second joints of the fingers. That bursæ exist in other parts of the body, I have no reason to doubt; one is not unfrequently found under the integuments, at the angle of the jaw; and others, extremely minute, and rarely demonstrable, are said to exist under the integuments of the back, corresponding to the spinous processes of the fifth, sixth, and seventh cervical vertebræ. More extended pathological inquiries may enable us still to discover others; for it is by their accidental enlargement that the presence of some of them has become known to surgeons.

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3. *On the Round Ligament of the Uterus.* By G. Rainey, Esq.—Speaking of the difference between the striated and non-striated varieties of muscular fibre, Mr. Rainey denies that the round ligaments are composed of the latter; and affirms, on the contrary, that they are composed of the striated or voluntary fibre. This opinion he supports on the following grounds—first, that the round ligament arises from three tendinous and muscular fasciculi; one from the tendon of the internal oblique, a centre one from the upper column of the external abdominal ring, the third from the inferior column of the same. These uniting form a round end, which expands upon the angle of the uterus. The striped fibres chiefly occupy the centre of the cord, but as they approach the uterus they lose this character, and assume that of the dartos muscle.

Mr. Rainey further states that the round ligaments do not, as was supposed, emerge from the external ring to be inserted upon the mons veneris; and that their use is in some manner connected with the act of coition.

In the same essay, the author investigates the changes which the uterus undergoes during gestation. He regards the increase in size to depend upon the development of the embryonic nucleated fibres of the unimpregnated uterus, which receive a new impulse on the reception of the ovum. After parturition, he supposes the fully developed fibres to be absorbed and replaced by fresh embryonic ones.—*Philosophical Transactions.*

4. *New Muscles of the Urethra.* By H. Hancock, Esq.—A great deal has been said and written upon the subject of spasmodic stricture and strictures in general; but I am not aware of any one having hitherto satisfactorily accounted for the several phenomena displayed in the various forms of impediments to the passage of urine which are usually described as spasmodic stricture. Some have ascribed them to inflammation; others to engorgement of the net-work of vessels surrounding the prostate; others, and the larger number, to morbid and irregular contraction of the muscles surrounding the membranous portion of the urethra, viz., Wilson's, Guthrie's, and Santorini's muscles, together with that usually denominated the "accelerator urinæ muscle." I have always considered these explanations unsatisfactory, and totally inadequate to account for the difficulties I have encountered in the treatment of urethral diseases. I have been unable to understand how voluntary muscles should continue in forced and excessive action so long as spasmodic retention of urine has been known to exist. I have been unable to account for the muscles just named causing spasmodic closure at parts of the urethra which they do not invest. I could not account for the almost complete retention of urine in cases where no impediment presented to the passage of instruments of large size; neither, by the reasons usually assigned, could I account for the sudden contractions of the urethra so frequently met with, and which could only be ascribed to the more general presence of muscular stricture than has hitherto been considered to obtain in these parts. Assisted by my friend Mr. Hogg, to whom I am greatly indebted, I have lately paid great attention to this subject; and I beg to submit to the society the results of our investigations. Sir E. Home, and various other surgeons, have described the urethra as muscular; but in this they were in error. The urethra itself consists of mucous membrane, lined by its epithelial scales, but it is closely invested by muscular fibres of organic structure similar to, and in fact continuous with, the muscular coat of the bladder. The muscular coat of the bladder appears to me to consist of two layers of involuntary muscular fibres, an internal and an external; the external, partly covered by peritoneum, passes forwards and extends over the outside of the prostate gland; the internal, on the contrary, separated from the mucous lining of the bladder by cellular tissue, accompanies the mucous lining when it becomes urethra, through the prostate gland, forming an involuntary muscular covering to the urethra in its passage through the gland. The membranous portion of the urethra is next closely invested by a continuation of these muscular fibres, which cannot be mistaken for any portion of Wilson's, Guthrie's, or Santorini's muscles, as the latter are voluntary, and present the usual striated appearance when viewed by the microscope, whilst the former are strictly involuntary and nucleated. Conducted forwards upon the membranous portion, they reach the bulb, and here they divide into two portions, a superior and an inferior; the superior continues onward to the orifice of the urethra, lying between the urethra and corpus spongiosum; the inferior passes on the outer surface of the corpus spongiosum, separating it from its fibrous investment, to which the fibres adhere pretty closely; these latter are also continued forward to the orifice of the urethra, and in their course they invest the spongy portion of the bulb; the urethra and the glans penis entering very largely into the formation of that peculiar structure found at the orifice of the urethra, and which appears to consist almost entirely of involuntary muscle and elastic cellular tissue, constituting an additional sphincter muscle to those already described as existing in various parts of the body. It will thus be seen that the corpus spongiosum urethræ lies between two layers of involuntary muscle, the one separating it from the urethra, the other from its fibrous covering, an arrangement, doubtless, exerting great influence upon the expulsion of the blood from the spongy tissue, when erection of the organ is no longer required, as well as upon the acceleration of the passage of the urine along the urethra; and I am doubtful whether the hitherto named accelerator urinæ muscles may not with more propriety be considered a depressor penis, or a direct opponent to the erectores penis. I have thought it right to make this short communication to the Society, as the now proved existence of a muscular and continuous muscular coat to the very orifice of the urethra may tend, in a great measure, to

explain the anomalies met with in the various cases of stricture, and may also be the means of introducing an improved means of treatment. I am still continuing the investigation of this subject; and, should the Society desire it, I shall be happy to bring it forward in a more detailed form at some future period.—*Report of Proceedings of Medical Society of London*, in *Med. Times*, 22d Feb. 1851.

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5. *Fistula of Stomach.*—Dr. Robertson gave to the Medico-Chirurgical Society a short sketch of the history of a patient at present under his care in the Infirmary, in whom a communication between the stomach and external surface of the abdomen had existed for several years. The perforation had resulted from internal causes, and the present condition of the patient encouraged the hope that a series of experiments upon the digestive process might be undertaken without prejudice to the woman's health. Dr. Christison, Dr. Spittal, Dr. Maclagan, and Dr. Simpson made some observations on the case, and a committee was named to make the necessary investigations on the subject. The committee consists of the President, Dr. Christison, Dr. Bennett, Dr. Douglas Maclagan, Mr. Goodsir, and Dr. W. Robertson.—*Monthly Journ.*, Jan. 1851.

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6. *Researches to prove the Non-vascularity of certain Animal Tissues.*—The following conclusions are given by Mr. Toynbee as embodying the results of his investigations:—

1. The articular cartilage of joints in a healthy state contains no blood-vessels, and that it is nourished by the vessels which surround it; in certain diseases of the joints, these vessels are prolonged into the substance of articular cartilage.

2. The fibro-cartilages of the joints and of the spine, when healthy, contain blood-vessels only at their circumference; in disease they become vascular.

3. That the following structures of the eye—viz., the cornea, the crystalline lens, and the vitreous humour possess no blood-vessels in a healthy state; in some diseases of the eye the cornea becomes vascular.

4. The epidermis of the skin, teeth, nails, feathers, and the hoofs of animals have no blood-vessels. The hoof of the horse is pervaded by numerous fine canals which circulate a fluid throughout the whole of the substance, and give to it the elasticity so essential to the due performance of its functions.

The author states that his object has been to establish as a law in animal physiology, *that organs are capable of being nourished, and of increasing in size, without the presence of blood-vessels in their substance.*

The application of the above-named law to the study of *surgery*, in reference to the causes of the extension of vessels into the extra-vascular tissues of the eye and the joints, when in a diseased state, and to the measures to be adopted for the prevention and cure of those affections which are dependent thereon, and to *pathology*, in the investigation of the nature of morbid structures, particularly of those classes which contain no blood-vessels, will, the author feels certain, be productive of scientific interest and of practical advantage.—*Philos. Trans.* 1841.

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7. *On the Absorption of Alimentary Substances, and the Functions of the Lacteals.*—M. Bernard read a memoir on this subject before the Academy of Sciences, Paris, in which he proposed to determine, by direct experiment, the nature of the nutritive principles which are absorbed and conveyed by the chyliferous vessels, in order to ascertain if there really exist any alimentary substances which absolutely escape venous absorption, and consequently avoid passing through the liver before arriving at the lungs.

Alimentary substances submitted to digestion are, in the intestinal canal, finally reduced to three principal substances—the saccharine, the albuminous, and the fatty emulsive; on these M. Bernard has instituted experiments:—

1. *With regard to the absorption of Sugar by the lacteals.*—On injecting large quantities of sugar into the stomachs of different mammiferæ, it has been found in the blood of the portal vein, while it was absent from the chyle of the thoracic duct at the same time and under the same circumstances; whence

it is concluded that sugar, before arriving at the lungs, traverses the liver, where it undergoes a peculiar physiological modification. If a solution of grape sugar be injected into the superficial veins of a dog, it speedily passes off by the urine; on the contrary, if the solution of sugar be injected into the radicles of the portal vein, the sugar is no longer eliminated by the kidneys, but passes into the circulation, and is assimilated in the same manner as if taken into the digestive canal. Thus it is shown that the absorption of sugar by the portal system is a condition essential to its assimilation, since, if confined to the lacteals, the saccharine principle is abstracted from the influence of the liver, and is diverted directly into the general venous circulation, as takes place when it is injected by the jugular vein.

2d. *As to the absorption of Albumen by the Lacteals.*—Albumen injected into the general venous circulation soon appeared in the urine. If injected into the portal vein, it does not then appear in the urine, but is assimilated in the same manner as obtains with sugar.

3d. *Absorption of Fat.*—M. Bernard's previous researches have shown that fatty matters are not capable of admission into the lacteals, until an emulsion has been formed by the action of the pancreatic juice. Immediately that this emulsion has penetrated the lacteals, their aspect undergoes an entire change; instead of remaining transparent, like other lymphatics of other parts of the body, they assume a milk-white appearance, and owing to the transparency of the coats of these vessels, the course of the fatty matter may be followed from the intestine to the left subclavian vein, where it is diverted into the thoracic duct. It is not necessary that fatty matters should traverse the liver in order to their assimilation. M. Bernard has injected fatty emulsions into the jugular vein, but has not found that substance in the urine.

Thus the products of digestion may be distinguished with reference to absorption into two groups: *e. g.* 1st, fatty and albuminous matter absorbed by the lacteals, passing into the general circulation without having traversed the liver. The last proposition cannot be taken in so absolute a sense as the former, since experiment and microscopical examination demonstrate that fatty matters are absorbed both by the portal system and by the lacteals.—*London Medical Gazette*, January, 1851.

MATERIA MEDICA AND PHARMACY.

8. *Evil Effects following the Incautious Administration of Chloroform.*—Dr. Bagot stated to the Surgical Society of Ireland, December 7, 1850, that a few months previously he had been sent for, at about half past ten P. M., to see a young lady to whom chloroform had been administered, at twelve o'clock that day, for neuralgic pains of the face arising from carious teeth. She was a healthy dark-complexioned woman, and had, he understood, great repugnance to the inhalation of chloroform, to which she submitted but as a last resource, after having exhausted every other available means of ridding herself of those very distressing pains. From inquiries, he judged that from a drachm and a half to two drachms had been administered before anæsthesia had been produced. At the period of Dr. B.'s visit, ten hours and a half after the administration of the chloroform, the symptoms under which she laboured were those of coma. She was lying on her left side, perfectly unconscious of all around her, her eyelids closed; on raising the lids, the eyeballs appeared much suffused, the pupils irregular, and scarcely acted upon by light. There was considerable congestion about her face, and her head felt hot; surface of the body and legs cold; pulse 90, thready, irregular, and intermittent. Up to seven o'clock her friends had not found much difficulty in arousing her, although she soon relapsed into the same state. Since that hour it had been much more difficult to dispel the stupor, and it was after many endeavours that Dr. B. was able to do so. When roused, however, she intelligently answered a question, but after some hesitation, as if endeavouring to collect her thoughts. She then almost immediately sank into the same comatose state, having first expressed herself to the

effect that she knew that she was dying. Two or three times during the day she had shown hysterical symptoms, crying when moved, and having the same thought of approaching dissolution before her mind. Her bowels (habitually confined) had not been moved for three days. The apothecary, by whom this very powerful agent had been administered, visited her more than once through the day, as also in the evening, but did not take any step towards recovering the patient from the very urgent symptoms under which she was evidently fast sinking.

The general features of Dr. B.'s treatment consisted in the admission of fresh air, strong carbonate of ammonia to her nose, an occasional sprinkle of cold water over the face, stupes of hot water, containing an abundance of mustard, to the feet and legs. As soon as she was able to swallow, draughts of ether and aromatic spirits of ammonia were given her, and in about two hours, when the urgent symptoms were relieved, and some reaction had set in, strong tea was administered, which seemed very grateful, and by which she was much benefited. Previous to leaving her for the night, Dr. B. prescribed a draught containing one drop of croton oil, which affected her bowels in seven hours.

It is worthy of remark that, as she recovered the effects of the chloroform, the neuralgic pains returned to her face with great violence.

At Dr. B.'s visit next morning, she informed him that she had passed a wakeful night, and had suffered much from headache, which was confined to the right temple. This pain continuing through the day, two leeches were applied to her temple, from which she derived immediate relief, and was enabled for the first time to turn off her left side. She was much reduced in strength by this illness, and fainted at her first attempt to sit up in bed, where she was obliged to remain some days.—*Dublin Medical Press*, December 25, 1850.

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9. *Effects of Chlorinated Hydrochloric Ether on Animals.*—M. Flourens read a note to the Academy of Sciences, January 13, in which he stated that he had found this agent to produce a powerful effect upon various animals. Dogs were placed under its full effect in about three or four minutes; all sensibility was completely destroyed, without any impairment of movement. Injected into the crural artery of a dog, both motion and sensation of the posterior extremities were lost, tetanic rigidity being produced. The effects observed were similar to those produced by chloroform and the essential oils; while the ordinary ethers, the fixed oils, naphtha, ammonia, and camphor, produced paralysis, with relaxation of the muscles, when injected by the arteries. The separation of the action of the nerve and of the muscle is thus effected, and a means of physiological analysis is furnished by the use of this ethereal compound.—*London Medical Gazette*, January, 1851.

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10. *On the Inhalation of various Medicinal Substances.*—Dr. Snow recently read a paper on this subject before the Medical Society of London.

He said that, previously to the discovery of etherization, medicines had rarely been inhaled, except with a view to their local action; but that there was no more reason to limit inhalation to pulmonary diseases than to restrict the exhibition of medicines by deglutition to affections of the stomach and bowels. He admitted, however, that the proper administration of medicines by inhalation was attended with much greater difficulties than their exhibition in the usual way. The chief object of his communication was to point out the manner in which certain medicines could be inhaled. According to their different physical properties, they might be inhaled either with or without the aid of heat; when heat was employed, they might be inhaled either in the dry way, or with the vapour of water.* The fumes expelled by heat from the extracts of opium, stramonium, and aconite were inhaled dry. Ammoniacum and other gum resins could be inhaled either in the same way, or with the vapour of water. Turpentine, creasote, camphor, iodine, and benzoic acid had been conveniently inhaled along with watery vapour, by placing the dose of medicine to be used in about half an ounce of water, which was heated by the

* See *Medical Times*, December 7, 1850.

flame of a spirit-lamp. Several of these medicines had also been inhaled at the ordinary temperature of the air, without vapour of water, as also had ammonia, hydrocyanic acid, and chlorine. For drawing nitrate of silver into the larynx in the form of powder, the bowl of a pipe, with a glass tube fitted into it, was used. A grain of nitrate of silver, finely powdered with five grains of loaf sugar, was inhaled, by a strong inspiration, once a day. The sugar was recommended by a French author for diluting the agent, and had an advantage over lycopodium powder and similar substances, which, not being soluble in the mucus of the air passages, caused irritation.

At the hospital for consumption at Brompton, the physicians to which institution had invited Dr. Snow to assist in contriving and superintending the inhalation of medicines, opium had been inhaled by a considerable number of phthisical patients generally with marked benefit. Relief had also been obtained from several other medicines: but the inhalation of iodine and chlorine had apparently not been attended with any advantage. It might not be uninteresting to mention that, whilst four patients were inhaling chlorine twice a day, in the summer of 1849, two of them were attacked with cholera, they being the only patients in the hospital that were attacked with it at the time. As chlorine can be smelt exhaling in the breath for hours after the patient has inhaled it, he thought that this occurrence was opposed to the hypothesis that the diffusion of chlorine in the air had the power of limiting or preventing the spread of cholera. It was not his intention to treat of the inhalation of chloroform on the present occasion; but, having been speaking of pulmonary affections, he might state that he had never seen chloroform fail to relieve an attack of spasmodic asthma in any case in which it had been inhaled.—*Medical Times*, January 25, 1851.

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11. *On the Physiological Effects of Picrotoxine, or the Active Principle of Cocculus Indicus.*—A paper on this subject was communicated to the Medical Society of London by Dr. Routh.

The deduction from a number of experiments upon the different classes of vertebrate animals was, that picrotoxine produced symptoms very nearly analogous to those attendant upon hydrophobia.

Exp. 1.—A dose of 20 grains of picrotoxine was given to a dog. After 20 minutes it produced salivation, tremors, succeeded by opisthotonos, convulsions, and great difficulty of breathing, recovery taking place.

Exp. 2.—Thirty grains inserted under the skin of the axilla of a dog. Similar symptoms were produced, and in addition, bloody stools and urine. In three days the dog recovered.

Exp. 3.—40 grains were given to a dog. Retrograde and gyratory movements were produced. Tetanus killed the animal. Post-mortem examination displayed the brain in a state of congestion, particularly at its base, and having much bloody serum in the ventricles. The muscular irritability was destroyed.

Exp. 4.—60, 120, and 100 grains were successively introduced under the skin of a donkey. The two first doses not producing much effect, the third was given, which speedily induced salivation. The animal pawed the ground with his fore feet, ran backwards, and died in a tetanic condition.

Exp. 5.—10 grains were inserted under the skin of a rabbit. In 59 minutes the animal died.

Exp. 6.—4 grains in the axilla killed a pigeon.

Exp. 7.—5 grains given to a frog produced no effect until the expiration of fifteen minutes, at which time he was attacked with opisthotonos.

Exp. 8.—5 grains were thrown into the water in which a gold-fish was placed. The animal became much excited, and leaped from the water two or three times.

The author drew attention to the circumstance of the effects of the poison simulating those produced by the gradual removal of the cerebellum and corpora quadrigemina, and to the fact of an increase in the animal temperature. No coma occurred in any of the above cases.—*London Medical Gazette*, January, 1851.

12. *On Iodognosis.*—M. Dorvault has published a series of researches on the chemical, therapeutical, and medical properties of iodine. To these, as embracing the entire knowledge of all the properties of that substance, he has given the name of iodognosis, *iodognosie* (from ἰώδης and γνῶσις).

We here submit an abstract of the medical portion of these researches, from the *Gazette Médicale de Paris*:—

Iodine, as a therapeutic agent, according to M. Dorvault, is unimportant; it is to its combination as *iodides* that its medical value is due. Even when introduced alone into the system, its therapeutic effects are to be attributed to its combination with the alkalies which exist in the fluids of the body. Under either circumstances the terms *iodic medication* express the same fact. Iodide of potassium is taken by M. Dorvault as the type of iodides.

Physiological Action of Iodides.—Iodides belong to that class of therapeutic agents to which M. Dorvault gives the name of *chemico-catalytic*, and form its most striking representative. This proposition is founded on the following facts: If the animal fluids (blood, lymph, semen, milk), or their proteic elements (albumen, fibrin, casein), be subjected to the action of a solution of iodide of potassium, it will be seen to prevent their coagulation and dissolve them. In producing this effect the salt remains unaltered; it acts, therefore, by virtue of what chemists have called the *catalytic* force. The same may be shown to have obtained when employed in certain pathological cases. The salt may be detected unaltered in the blood or urine, or other secretions.

These facts have been observed by many other investigators, and all have found practically that iodide of potassium promotes secretion, increases the functions of the mucous glands of the alimentary canal, and of the liver, kidneys, skin, pancreas, parotid, &c.

Iodide of potassium is rapidly eliminated from the animal fluids. Dr. Scharlan (of Stettin) found that a patient, to whom he gave 53 grammes daily, eliminated 51 grains by his urine. The five grains lost were accounted for by the elimination of this salt by the saliva, sweat, and tears. Dr. Kramer satisfied himself, from his experiments, that six days sufficed for the complete elimination of this salt after its exhibition during 50 days. The researches of Dr. Marchal, at Vâl de Grace, also prove the rapid passage of iodide of potassium by the urine.

Iodine introduced into the system has been separated by the action of alkalies on the blood.

Special Action of Iodides.—The accidental or consecutive action of iodides has often been mistaken for their primary or efficient action. Some physiologists have considered iodine as a stimulant, others as a contra-stimulant. M. Dorvault observes that neither view expresses the exact truth. He admits a certain degree of general constitutional excitement under its employment; also that, in severe pains of the bones and other tumours, the action of iodine is sedative, by allaying pain. But in both these cases the stimulation and the sedative action are the consequence, not the cause, of the beneficial therapeutic agency of the remedy.

A third opinion, that iodine is alterative, M. Dorvault regards as nearer the true explanation, but as insufficient in fact, as the medicinal influence of the iodides is often seen after the first dose, therein differing from alteratives. M. Dorvault admits, however, the alterative action of some substances in which iodine exists in minute quantities,—*e. g.*, sponge, cod-liver oil, &c.

M. Dorvault also considers the purely chemical theory of the action of iodine as incorrect; his own opinion being, that the medicinal virtue of the iodides consists in their power of dissolving or further liquefying the *humours* of animal bodies, of separating their constituent or proteic elements, and disposing these to the formation of new products, such as coagula, false membranes, and pathological concretions: that the iodine and the potassium united both concur in the production of this result, by a special and peculiar chemico-physiological power which iodides possess of liquefying the fibrine of the blood without destroying the globules; while potash, ammonia, and other substances, dissolve the blood in all its parts.

Therapeutic Action of Iodine. The pathological states in which it is employed.—Goitre, scrofula, syphilis, skin diseases, white swelling, caries of the vertebræ, tabes mesenterica, rickets, phthisis, leucorrhœa, amenorrhœa, and chlorosis, cancer, cachexies, dropsy, poisoning, tumours, rheumatism, various chronic diseases, hypertrophy. These are the forms of disease in which, M. Dorvault observes, the administration of iodine is indicated.—*London Medical Gazette*, January, 1851.

13. *New preparation of Phosphate of Iron.*—Dr. Routh recently exhibited to the Medical Society of London two specimens of phosphate of iron dissolved in metabasic phosphoric acid—one in a solid, the other in a fluid state. The compound was prepared by adding as much phosphate of iron as the metabasic phosphoric acid in a boiling state would take up, and allowing it to cool. The proportions would be found, as nearly as possible, two of acid to one of the phosphate. The solution obtained is of a semi-transparent, greenish or slaty hue. If exposed to the air for a day, it hardened; but mixed with liquorice powder or flour, it could be made up at once into pills. The compound was soluble in any proportion of water, and free from any nauseous, inky taste. Dr. Routh had not analyzed it, and could not assert whether it was simply a solution of the phosphate in the acid, or a new superphosphate that was formed. He had given it largely. It appeared to him to be better adapted for and more speedy in bringing about a cure, than other preparations of iron, in some cases of anæmia and debility, brought on by venereal or other excesses, overstudy, and other depressing diseases; in each there was a prevalence of nervous symptoms, and a large quantity of phosphates voided by the urine. It seemed to act on the same principle as cod-liver oil, i. e., as the latter might be considered to supply the amount of carbon necessary for combustion directly to the lungs, thereby checking the drain upon the system, and allowing it to rally from its hectic state; so he supposed the present remedy supplied directly to the brain the amount of phosphorus necessary, to the undue diminution of which the nervous disorder was probably owing. The medicine did not gripe or constipate. He gave it in doses of j or ij grains three times a day.—*Medical Times*, January 25, 1851.

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

14. *The Chemistry of Tubercle and the Special Pathological Anatomy of Tuberculosis.*—Henry Ancell, Esq., in his interesting lectures on Blood diseases, now in course of publication in the *Medical Times*, makes the following interesting remarks on the chemistry of tubercle, and the special pathological anatomy of tuberculosis:—

"The history of tubercle comprised in my two former lectures contains indubitable proof that this anatomical element of disease is a substance *sui generis*. Its physical, microscopical, and chemical characters show that it differs from every educt or product of nutrition or healthy secretion or excretion, and from all the educts or products, structural or amorphous, of ordinary inflammation. It differs from every other morbid product, non-malignant, malignant, or parasitical. It is essentially neither serum, pus, coagulable lymph, albumen, fibrine, nor any particular texture. At the same time, it is manifestly derived from the blood in an unhealthy condition, and the characters of the product and those of the morbid blood have certain relations which indicate very satisfactorily that the one depends upon the other. The morbid liquor sanguinis, and the deficient and perhaps structurally defective red corpuscles of the blood, are the analogues of the amorphous stroma and defective cells of tubercle; the vitiated albuminous constituent of the plasma is probably the analogue of the caseous constituent of tubercle and even of tuberculous and scrofulous pus; the low vitality of the blood indicated in my diagram is the analogue of the comparatively inorganic quality of the tuberculous product and of the very low degree

of organization which it presents. Organic chemistry has taught us thus much; it remains for new researches to develop the essential character both of the morbid condition of the blood and of its product the liquor tuberculi; the discovery of the one will necessarily comprise that of the other. When treating of the general pathology or theory of the disease, the views which have been entertained of its nature will come under consideration. In the mean time, the analyses recorded in the last lecture suggest a few remarks, and the anatomico-pathological facts connected with the diseased state of the blood and the deposit of tubercle, require to be detailed, since no theory can prove satisfactory which is not consistent with these facts.

"As respects the chemistry. In the first place, although variable, there is a much nearer approach to uniformity in the results than might have been expected. We have to bear in mind the very variable circumstances under which tubercle is deposited in the tissues, and collected by the chemist for examination. Its composition undoubtedly varies according to the length of time it has been deposited and the stage of its development. If we were to admit that it is a definite chemical compound, which is very probable, but by no means proved, and is perhaps incapable of proof or disproof, still this compound must be subject to changes and to admixture with numerous materials, as with those composing the tissues, which, by pressure and otherwise, become disintegrated and blended with the essential constituents of tubercle, or with the products of inflammation, as pus or lymph, from inflammation of the parenchymatous structure of an organ, or with mucus and pus from the mucous membranes, or with blood itself. It is always difficult, and frequently impossible, for the chemist to separate these different products, or to estimate their proportions. Tubercle must also, from the same causes, exhibit differences according to the nature of the tissue in which it is deposited.

"Chemical analysis leaves no doubt that tubercle contains a protein compound as an essential constituent, which appears to bear a close analogy to, if it be not identically, casein. This fact is confirmatory, if not demonstrative, of the view taken throughout these lectures, that it is a secretion from the blood, for all the facts of science contradict the notion, that protein compounds are formed in any of the animal tissues, or are derived by those tissues from any other source than the blood. The caseous quality of tubercle and scrofulous pus indicates the presence of casein in the liquor tuberculi, showing that from the liquor sanguinis of tuberculous blood a caseous blastema is exuded, differing, as respects its caseous quality, from the ordinary healthy blastema. Its caseous quality renders it unfit to nourish the tissues, and gives it a tendency to solidification.

"The existence of pyine, regarded as a tritoxide of protein, detected in particular specimens by various chemists, does not, in my mind, invalidate that of casein. It is manifestly by no means a constant constituent. The question will at once arise, whether a peculiar substance may not be the result of inflammatory action on tuberculous blood resulting in the superoxidation of the protein compounds. In this point of view, pyine would be regarded as an inflammatory product superadded to the essential constituent of tubercle; but the chemistry of the phases and complications of tuberculous development is at present so imperfect, that it is scarcely safe to venture even a conjecture upon such a point.

"One of the most interesting facts in connection with the chemistry of tubercle, is the existence of a large proportion of fatty matter. This is the result of a majority of the analyses, and Rokitanski, Gulliver, and Scherer affirm that this constituent increases from the time that tubercle loses its transparency and as the softening process proceeds.

"A most curious fact also was discovered by M. Guillot, which, if corroborated, might ultimately assist us in arriving at a knowledge of the essential nature of tuberculosis. M. Guillot has ascertained experimentally, that the dried parenchyma of those portions of the lung which in phthisis, as also in pneumonia, have become impermeable to the air, contains a very large proportion of fat. In phthisis as much as 40 and even 52 per cent. of fat is said to have been detected in the desiccated tissue of the diseased part of the lung. It further ap-

pears, that the proportion of fat in the dried parenchyma of the fœtal lung is diminished, after respiration becomes established, from the proportion of ten or 18 per cent. to 6 per cent., and that in all diseases wherein a portion of lung loses its functional powers, an accumulation of fat takes place in that portion.

"Two explanations have been suggested of this increase of fatty matter in tuberculous or non-respirable lung. It has been held, that the materials of respiration being to a certain extent converted into fatty matter in the blood, preparatory to eremacausis, and this eremacausis taking place in part during the passage of the blood through the lungs, an accumulation of fat takes place in consequence of the lung having ceased to perform its function. It has on the other hand been held that tuberculous matter is essentially composed of a large proportion of fat. According to the latter view, the nature of tuberculosis is diametrically opposite to that suggested by some authors—it is a fatty degeneration.* These facts have to be associated with the frequency of a fatty condition of the liver in tuberculosis, as observed by Louis and others, although other results were obtained by the experiments of Regnaud; and with the effects of cod-liver oil in the treatment of tuberculosis. The whole must be comprised in the consideration of the essential nature and theory of the disease. The excess of fatty matter in tubercle is taken by Dr. Madden to imply a retrograde morphology, and this accords with the views of Dr. Addison, to which I have already adverted.

"Tubercle appears also to contain a great excess of extractives, and, as compared with other proteiniform products, an excess of water. These and its other qualities associate the tuberculous deposit with the vitiated state of the liquor sanguinis, which I formerly described as an essential character of tuberculous blood.

"The analysis of cretaceous masses is one of the most interesting, not to say important, parts of the subject. The uniformity of the results, and the analogy to bone-earth and bone, will strike every one. Moreover, it appears that, after the process of softening, if the tendency of the constitutional and local affection is to quiescence and health, and even before softening, if that tendency exist, the aqueous parts of tubercle must be absorbed. Where this tendency to health and restoration occurs, the analyses also prove another most important fact; the crude tuberculous matter which, in its original state, is probably incapable of resorption, must undergo transformations by which it is rendered susceptible of that process. It is only necessary to consider the large proportion of earthy material which remains in cretaceous tubercles, if these cretaceous masses are justly regarded as the remains of tuberculization, in order to admit this. The quantity of earthy matter aggregated in these masses is a most significant fact. Crude tubercle contains but a very small proportion of earthy salts—say one per cent.—whereas these masses frequently contain ten, twenty, and thirty grains. The deposition and resorption of animal matter, leaving earthy particles behind, must have taken place to a very great extent, or for a very considerable period. It appears to me, that where the tendency to cretaceous aggregation has existed in the highest degree, the blood must have wholly or partially lost its tuberculous quality; and that, after having secreted intractable tubercle, owing to this favourable change it pours out a blastema, which, after depositing its earthy salts, is susceptible of resorption, and is actually absorbed, the earthy particles gradually accumulating in the tuberculous cavity. That some such process as this occurs follows from a consideration of the whole series of chemical facts.

"The ultimate analyses and their reduction into formulary have been regarded by some rather as matter of amusement than of utility. I cannot adopt that view. Whatever the defects of organic chemistry at the present moment, I believe it is gradually elevating medicine into a demonstrative science; and I think it is incumbent on us to regard discovered facts in every point of view. Scherer finds, in one point of view, an excess of carbon and hydrogen in tubercle from the liver as compared with that from the lung; and he thinks this may arise from the deposit in the lung being more exposed to the air. Dr. Glover's analyses give to the protein compound of tubercle in general a smaller per centage of azote than those of Scherer.

* Compt. Rendus, Juin 12, 1847, Academy of Sciences.

"When it is considered that the blood of probably one-third of the population of Europe is more or less affected with the tuberculous taint, and tuberculous subjects are exposed, equally with the robust and healthy, to the exciting causes of all those anatomical changes constituting the fatal diseases which cut short the life of man, it will be readily understood that the morbid anatomy of tuberculosis might be made to comprise the whole anatomical catalogue. Accurate observation would no doubt show that all the pathological products of disease are more or less influenced by the tuberculous state of the blood. Without extending their researches thus far, morbid anatomists have ascertained, not only the fact of the deposition of tubercle in the organs and tissues as a peculiar morbid element in the tuberculous subject, but the occurrence of other pathological conditions; and the positive increased frequency of various anatomical changes in connection with this disease of the blood, and of the particular forms and varieties which it presents. No part of scientific medicine perhaps does higher honour to the profession than the genius, and depth and accuracy of research and observation, displayed in the minute investigation of the characters and specialties of morbid structure in this disease, as shown in the works of Baillie, Laennec, Andral, Carswell, Louis, Hasse, Rokitanski, and other pathologists."—*Med. Times*, Nov. 16, 1850.

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15. *On Elastic Fibres found in the Sputa of Phthisis.* By Professor Schroder Van der Kolk.—The learned Utrecht professor, so well known for his researches into the structure of the lungs, declares that the microscope offers an infallible means of detecting the existence of cavities, by exhibiting in the sputa the presence of the *elastic fibres* which surround the cells of the lungs; and this the more certainly as the cavity is in an early stage of formation, consequently at the very period when such a sign, if to be depended upon, is most wanted. They can be examined under a magnifying power of 200. They are of an arched form, very thin, with sharp borders, and are sometimes covered with fat, which is removable by ether. They must not be mistaken for a species of *conferva*, which very rapidly appears in the expectoration, especially when this contains fat, but which is recognizable by its ramifications terminating in tumefied cells.—*British and Foreign Medico-Chirurgical Review*, January, 1851, from *Rev. Med. Chirurg.* vol. viii. p. 222.

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16. *Is Fibre an Essential Element in the Structure of Cancer?*—Much difference of opinion still exists as to what are the parts of a cancerous growth which are essential to it, and therefore the following observations on the subject by Dr. Redfern (*Monthly Journ. Med. Sci.* December, 1850), are worthy of attention:—

"Professor Bennett states that fibres, cells, and a viscous fluid, are the three essential elements of a cancerous formation. Lebert regards the cancer-cell as the only distinctive, constant, and essential element, the predominance of one or other of the accidental and secondary elements determining the varieties of form and appearance; yet he regards the fibres as next in point of importance and frequency, and speaks of them in encephaloma as pale, fine, and in small quantity. Müller says that the fibres of encephaloma are indistinct, and that the fusiform cells are arrested in their development into fibres;—whilst Vogel states, that in encephaloma fibrous structures are wholly absent. As has been before remarked, it is excessively difficult to state whether the fibres which are found in many tumours are really cancerous, or whether they belong to the proper structure of the organ in which the tumour has been developed; and, consequently, careful examinations of cancerous formations in organs which contain no fibrous tissue in their healthy state, become of extreme importance in leading to a true determination of the mode of development and actual position of the fibrous element in cancer.

"From the examination of the cancer of the brain here recorded, and of numerous cases of encephaloma, I am led to believe that fibres are by no means invariably to be found in such growths, and that their fibrous element is accessory and non-essential. If this be so, the existence of fibrous tissue in most cancerous structures remains to be accounted for in either of two ways—viz., by hypertrophy of the normal fibrous tissue of the part, or by a new develop-

ment of fibre from the recently diffused blastema—a development commenced and completed under the influence of the determining energy exerted by the fibrous tissue of the part itself, agreeably to the law of analogous formations. Presuming that the fibrous element of cancer is developed in either of the methods just indicated, its absence in cancer of the brain is readily accounted for, as in that organ there is no fibrous tissue to acquire an unusual development, or to determine the formation of new tissue of its own kind from cells. *If* proper *cancer cells*, of a fusiform shape, *ever become transformed into fibres*, their presence in cancer of the brain, unaccompanied by the fibrous element, may be owing to a deficiency of the stimulus necessary to insure such development, and may possibly be dependent on the absence of fibres in the original and healthy texture of the organ.

"In conclusion, I would suggest that a carefully conducted statistical inquiry into the relative amounts of the various elements of which cancerous deposits are composed, viewed in connection with the normal structure of the organs in which each one is found, would be of great service in the further examination of this difficult problem, and that it might perchance lead to its satisfactory solution."

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17. *Value of a Chemical and Microscopical Examination of the Urine as a means of Diagnosis in Renal Diseases.*—Dr. Geo. Johnson makes the following just remarks on this subject in an interesting paper in the *London Journal of Medicine* (Feb. 1851):—

"None," he says, "but those who have paid much attention to the diseases of the kidneys, and to the means of distinguishing one form of disease from another, can form an estimate of the true value of the information to be derived from a chemical and microscopical examination of the urine. It may safely be affirmed, that a microscopical examination of the urine is, in general, as necessary for the formation of a correct opinion in cases of renal disease, as a physical examination of the chest is for the exact diagnosis of diseases within that cavity. To determine the true nature of a disease in the kidney, and to form a probably correct judgment as to its course and termination, it is not sufficient merely to ascertain that albumen is present in the urine, that the specific gravity of the secretion is abnormal, and that moulds of the uriniferous tubes may be detected by the microscope. These signs may each and all be present in a given case; but a more precise examination of the circumstances is necessary for the formation of a correct diagnosis. The mere enumeration of these signs, such as is very commonly given in reporting cases of renal disease, will as little enable a practitioner to ascertain the true nature of disease in the kidney, as would a simple report of a patient having cough, with dyspnœa, expectoration, and a sound produced by the mixture of air and liquid in the air-tubes, suffice for the exact diagnosis of disease in the lung. In both instances, the signs must be exactly observed, and correctly reported; otherwise no sound opinion can be based upon them.

"It is well known that diseases of the kidneys are amongst the most frequent of those which destroy life, and that some forms of renal disease are curable, while others are almost certainly fatal. In many of the most obvious circumstances, all the forms of renal disease are alike; and it is only by a careful attention to differences, which, however minute, may yet be readily and certainly appreciated, that we can hope to distinguish one disease from another, or to give a confident opinion as to the probable course and termination of a case.

"The microscopical examination of the urine is much facilitated by placing it in a conical glass, which will contain about three or four ounces. The fluid should be allowed to stand for a few hours before examination. I usually put it in the glasses at night, and examine it with the microscope on the following morning. This delay is not necessary if the sediment is abundant; but in many cases, when the sediment is small in quantity, it is quite essential that time should be allowed for its deposition to take place. A small quantity of the lower part of the liquid should then be removed with a pipette, and placed in a shallow cell for microscopical examination."

18. *Cases of Renal Disease.*—The following cases are related by Dr. GEORGE JOHNSON, *London Journal of Medicine* (Feb. 1851), with a view of elucidating the diagnosis and prognosis of some varieties of renal disease:—

CASE I.—*Acute Desquamative Nephritis—Urine very scanty, and highly Albuminous, with Epithelial Casts—Epileptic Convulsions and Coma—Recovery.* I was called to see Ann Fers, æt. 54, as a dispensary patient, on the 6th Dec., 1849. I found her in a state of semi-stupor, and learned that she had been seized with a convulsive fit in the night. She had a wild, distracted look. The tongue was brown and dry. I subsequently learnt that, during the preceding six or seven months, she had lived very badly, in consequence of her husband being out of work. She had gradually become weak; and had restless nights, with frightful dreams, and spectral illusions. About a fortnight before I saw her, she had become much worse, with vomiting, intense headache, slight general dropsical swelling, pain in the back, and very scanty secretion of urine. She was ordered to have six leeches applied to the temples and to take three grains of calomel every four hours.

In the course of the evening some urine was obtained. It had an abundant precipitate of lithic acid, and contained numerous *casts of tubes with entire cells of renal epithelium*;* when boiled, it became almost solid with albumen.

December 7th. In the morning of this day she was much the same. There had been no return of the convulsions; she had the same wild and half-conscious expression of countenance; there was frequent vomiting. Eight ounces of blood were ordered to be taken, by cupping, from the lumbar region: two pills of colocynth and calomel to be taken immediately, and an effervescing draught every four hours.

December 8th. She was better; and said she was much relieved by the cupping; complete consciousness having returned soon after the operation. She had some sleep in the night; but was disturbed by horrid spectral dreams. Bowels freely opened; urine more abundant and clearer; still some vomiting; tongue less dry and cleaner. To take a mixture of sulphate and carbonate of magnesia three times a day.

From this time she steadily and progressively improved. The urine became more abundant; and all cerebral symptoms disappeared.

January 3, 1850. She began to take sulphate of iron with quinine three times a day. At this time the urine had a specific gravity of 1010; it was pale, abundant, contained a very few casts, entangling disintegrated granular particles of epithelium, the casts being of *small size:* albumen was still abundant.

February 4th. The urine had much the same characters. She was still pallid and feeble. The steel and quinine were continued.

March 7th. The quinine was omitted, and the dose of sulphate of iron was increased to two grains, with infusion of quassia, three times a day.

During the month of March she became much stronger, and in every way better. She gained flesh; and her face lost its pallor, and assumed a healthy hue. Towards the end of the month the urine was free from all trace of albumen, and contained no casts, nor renal epithelium. She remained under observation some weeks after this: her health continued good, and her recovery was complete.

REMARKS. I reserve my remarks on the diagnosis and prognosis in this case, until I have referred to some other cases, with which it may be compared and contrasted. With reference to treatment, I have found in other cases of acute desquamative inflammation of the kidney, that cupping in the lumbar region has afforded the same immediate relief to the cerebral symptoms which was so striking in this case. There is no remedy in which, under the same alarming circumstances, I have an equal degree of confidence; and I feel assured that the abstraction of a small quantity of blood by cupping, from the region of the kidneys, is much more efficacious in removing cerebral symptoms than any treatment directly applied to the head. In all cases of acute renal disease, whether occurring as a consequence of scarlatina, or from any other cause,

* It is proposed to call casts of this kind "epithelial casts."

when the urine is very scanty, and the patient complains of severe headache and drowsiness, there is much reason to fear that these symptoms may be followed by convulsions and coma; and unless the earlier symptoms are checked by a rigidly low diet, free purging, and the use of diaphoretics, no time should be lost in applying cupping-glasses with the scarificator over the kidneys. The congestion of the renal blood-vessels is by this means lessened, the secretion is quickly increased, and the blood being thus purified, the cerebral symptoms are directly relieved. It must always be borne in mind, that an imperfect elimination of the urine will impoverish the blood more than the abstraction of a moderate quantity from the vessels, and that an attack of convulsions, if it do not end in fatal coma, may produce greater injury in the brain than all the powers of nature or of art can repair.

Case II.—*Occasional attacks of Gout—Chronic Bronchitis—Urine Albuminous, and containing Granular Casts—Death preceded by Convulsions—Chronic Desquamative Nephritis.* Benjamin Hobday, æt. 47, a waiter, with sandy hair and pallid skin, was attended by me as a dispensary patient in January, 1847. Was in the habit of drinking freely, and had several times had gout. About three months before I first saw him his wife had observed that his abdomen became tumid and his face rather puffy; this soon subsided, and there was no subsequent appearance of dropsy.

This present illness began six weeks before I saw him, with cough and mucous expectoration. There was large crepitation over both sides of the chest. He was losing flesh; he always appeared dull and heavy; and his tongue was dry and brown. He took an antimonial mixture without relief. The urine was scanty and high coloured; it contained a small quantity of albumen, and numerous *dark brown casts apparently composed of disintegrated epithelium.** No blood-corpuscles were observed. The specific gravity of the urine was not noted.

January 25th. He had several attacks of convulsion, in the intervals of which he lay muttering and insensible. On the following day he died.

Post-mortem Examination. The brain and its membranes appeared quite healthy. The lungs contained scattered crude tubercles, and were much engorged and carnified. The only organs decidedly diseased were the kidneys; and they presented the characteristic appearances of chronic desquamative nephritis. The cortical substance was wasted, and its surface irregular and granular. Some tubes contained an excess of cells, differing little in appearance from the normal epithelium; while the greater number of the tubes contained the same granular material, which, when washed out, had evidently formed the casts which were observed in the urine during the life of the patient. Other tubes, again, were pale and transparent, being composed only of basement membrane; the epithelial cells, which probably had first become disintegrated, having been washed away by the current of liquid passing through the tubes.

Remarks. The preceding case is an example of the form of renal disease which is very commonly observed in gouty subjects. The blood is contaminated by certain morbid matters, as a consequence of the gouty diathesis; the kidneys make an effort to eliminate these materials; and, in doing so, their secreting cells undergo a modification. They become opaque and granular, then completely disintegrated, and subsequently are washed away, leaving the tubes denuded. After the destruction of the secreting cells, the tubes waste in consequence of the removal of the vital attractive influence of the cells upon the blood.† The cortical substance thus becomes irregularly contracted and granular.

There is one point of view in which it will be instructive to compare the case of Hobday with that of Fers. It might have happened to me to have seen Hobday for the first time as I did Fers, soon after the first attack of convulsions. The question arises—were there any distinctive signs in the two cases which

* The term "granular casts" sufficiently expresses the character of these bodies.

† On this subject see the author's paper "On the Proximate Cause of Albuminous Urine and Dropsy," in volume xxxiii. of the *Medico-Chirurgical Transactions*; also on the "Inflammatory Diseases of the Kidney," in volume xxx.

would have suggested, in the one case, a much more hopeful prognosis than in the other? This is clearly a question of great practical importance, and one, too, which happily admits of a decisive and satisfactory answer. In the case of Fers, the urine contained what I have called "epithelial casts," that is, fibrinous matter entangling *entire epithelial cells;* and these, with albumen, and very commonly blood, in the urine, indicate a recent acute disease in the kidney. In such a case, there is much reason to expect recovery, if we can succeed in warding off the urgent symptoms induced by the poisoned condition of the blood, consequent on the impaired excretory function of the kidney. In the case of Hobday, the appearances were very different. The casts in the urine were composed of *granular particles of disintegrated epithelium.* My observation has taught me to associate this form of cast with a chronic disease in the kidney. Where these casts have been observed in the urine during life, the kidneys will be found after death more or less wasted, sometimes extremely so, and the tubes will be in the condition described in the case of Hobday, some being entirely denuded, and others filled either with disintegrated epithelium, or with cells differing more or less from the normal epithelium. This chronic form of disease may have advanced to the extreme stage of atrophy before the occurrence of any urgent symptoms. Amongst the most common and most serious of its ultimate consequences is an attack of convulsions, recurring more or less frequently. Now, if in a case in which convulsions have once occurred, we find the urine albuminous and containing the "granular casts" described above, we must be prepared for a recurrence of the attacks, and for the probability of a speedily fatal termination.

I must beg my readers to bear in mind, that the preceding remarks relate to cases in which convulsions or coma, or other serious mischief, have resulted from deficient renal excretion, such symptoms affording evidence of extensive disease in the kidney, which, if it have gradually advanced to that degree by a process of chronic inflammation, is but very little under the influence of treatment. The "granular casts," *per se*, indicate merely the *form* of disease, and not the stage of its progress, or the degree of mischief which it has produced. Still the existence of these casts is a very important sign, being present from the very commencement of the chronic desquamative process. They may often be detected before the disease is so far advanced as to render the urine albuminous; and at this early stage of the disease we have most reason to expect that our remedies will be successful. Further, the proportion of this granular material in a given quantity of urine affords an index of the rate at which the disease is progressing. The granular casts are composed of disintegrated epithelial cells, which, being thus shed, appear in most instances not to be reproduced; the greater, therefore, the quantity of this material discharged with the urine, the more rapid must be the destruction of the secreting tissue of the kidney, and the more speedy will be the occurrence of urgent symptoms from suppressed secretion. In the extreme stages of chronic desquamative disease, the granular casts sometimes disappear more or less completely, and are replaced by casts of a very different kind, as will be seen in the history of the succeeding case.

It may be well to remark in this place, that there are at least two circumstances, under which the occurrence of granular casts does not indicate the chronic disease above alluded to. A moderate amount of care will, however, in either case prevent an error of diagnosis. *First*, after an attack of acute desquamative nephritis, it commonly happens that, for some days, while the urine is returning to its normal condition, casts composed of disintegrated epithelium and blood are discharged with the secretion; these gradually diminish in number, and soon entirely disappear. *Secondly*, after an attack of renal hemorrhage, some blood which has remained in the tubes becomes disintegrated and washed out in the form of granular casts, which, however, have generally a yellowish-brown blood-colour, and this would suffice to distinguish them from the epithelial granular casts. In addition to this, the occurrence of hematuria would be almost conclusive evidence of the non-existence of chronic desquamative nephritis, the extremely thickened condition of the blood-vessels

in that disease rendering the occurrence of renal hemorrhage, at least in the advanced stages, a very rare accident.*

In one case of scurvy I observed yellowish-brown granular casts, which I at first supposed to be indicative of chronic desquamative disease, but which I subsequently found to be composed of disintegrated blood-corpuscles and fibrine. The man quickly recovered under the care of Dr. Todd, in King's College Hospital, and in a few days the casts entirely disappeared.

Case III.—*Acute Desquamative Nephritis passing into Chronic Desquamative disease, with granular casts in the Urine, and subsequently a waxy deposit in the Kidney, with "Waxy Cysts" in the Urine—Scanty Secretion—Pericarditis—Pleurisy—Death.* John Revels, aged 30, a labourer, of temperate habits, but much exposed to wet and cold in his work. About seventeen years ago he was ill for a month with dropsy, but recovered completely. His present illness began about seven or eight months ago, after getting wet through while at work, and standing for some hours in his wet clothes. After this he felt "chilly and shivering, and miserable;" the breathing soon became oppressed; and he began to suffer from headache, which had continued until the present time; he had gradually grown pale and weak, and had lost flesh; there had occasionally been slight swelling of the face and hands. He had suffered much from dyspepsia, and once had bleeding from the nose to a considerable extent, since which he had discontinued his work, on account of weakness. He reported of the urine that at the commencement of his illness it was very high coloured—"like porter;" and that it was at the same time scanty; but that it soon recovered its natural appearance, and became more abundant than natural. He had sometimes got up four or five times during the night to pass water, and had passed as much as three quarts in twenty-four hours.

This sequence of phenomena is very commonly observed in cases of acute desquamative nephritis; the urine being at first scanty, and darkly tinged with blood, and shortly afterwards becoming paler and much more abundant than in health. I have suggested an explanation of this abundant secretion of urine in a paper "On the Inflammatory Diseases of the Kidneys," published in volume xxx. of the *Medico-Chirurgical Transactions.*

The preceding narrative brings the history of the patient to the 17th Nov. 1847, when he first came under my observation. It was then noted, that he was of middle height, muscular, but the muscles flabby; hair light; face and lips very pallid. He complained chiefly of weakness and slight headache; his breath was short, on making any exertion; the sounds of the heart were normal. Pulse 88; skin cool; tongue clean; no thirst: appetite good; but he was much distressed by flatulence for about two hours after eating. This is one of the most common and distressing symptoms in cases of chronic renal disease. He passed about four pints of urine in twenty-four hours, of specific gravity 1012. It deposited a rather abundant dense whitish precipitate composed of dark granular casts (probably disintegrated epithelium), with some scattered renal epithelium; there was no blood nor crystals: albumen was present in small quantity. The nature and the amount of the sediment at this time indicated rapidly progressing chronic desquamative disease.

November 20th. I admitted him into King's College Hospital, under the care of Dr. Todd. On the 24th and 26th the urine was again examined, with the same result as before.

December 11th. The urine had the same characters as before. During the last twenty-four hours he had passed four pints (16 oz.) and 4 oz. He was getting worse; his face was pale and puffed; the countenance was heavy; he complained of weakness and drowsiness, and occasionally vomited after his meals.

December 16th. I now first observed what I propose to call the "waxy casts"†

* Upon this point, see the author's paper, before alluded to, in *Med.-Chir. Trans.*, vol. xxxiii.

† The term *waxy* is applicable only to the appearance, and not to the chemical composition of the material, which is probably of a fibrinous or albuminous nature.

in the urine, mixed with the dark granular casts before mentioned. The waxy casts were of a yellowish white colour, very much resembling wax; they had a well-defined outline, and a diameter of about 1-400th or 1-500th of an inch; they did not entangle epithelial cells; but some contained, here and there, a few small nuclei, about the size of blood-corpuscles.

December 20th. The waxy casts were more numerous in proportion to the granular casts. The urine had a specific gravity of 1012; albumen was moderately abundant.

December 27th. The legs were swollen, and pitted on pressure.

January 1st, 1848. He had shortness of breath, and uneasiness about the heart. Pulse 96.

January 4th. The countenance was anxious; a loud double friction sound was heard over the heart. Pulse 120. Respiration 32. He passed less urine, perspired freely, and vomited frequently.

January 5th. Feeling that he was beyond hope of recovery, he insisted on being removed to his own house, where he gradually sank. The urine became very scanty. A catheter was once passed, under the idea that the secretion was retained in the bladder; but scarcely any was found there. At length he became delirious, and died on the 11th January.

Post-mortem Examination two days after death. The body was well formed, and muscular, very little emaciated; the skin was very pallid. The pericardium contained a moderate quantity of serum. The surface of the heart was roughened with recent lymph; the heart was larger than usual; the left ventricle was dilated, and its walls were very thick; the valves were all healthy. There was some lymph on the right pleura, in contact with the pericardium. The lungs were congested, but in other respects healthy.

Kidneys. The cortical substance was thinned and contained a yellowish-white firm, waxy material, which, on the surface, formed projecting granules, varying in size from a pin's head to a large pea. In parts where this material was most abundant, the tissue was anæmic; where it was less abundant, the vessels were congested. On the surface of one kidney there was a cyst, of the size of a large pea. Some of the tubes were crowded with epithelium, some contained granular particles of disintegrated epithelium, others were denuded; and others, again, contained the same wax-like material which had formed the casts already described as existing in the urine. At the same time I noted an appearance of fibrous tissue, which I then supposed to be the result of conversion of the basement membrane of the tubes into fibrous tissue, but which I have since ascertained to be hypertrophied arterial walls. With reference to this point I must again refer to my paper in the thirty-third volume of the *Medico-Chirurgical Transactions.*

Remarks. This case was evidently, at the commencement, one of acute desquamative nephritis. If at this time the patient had been subjected to proper treatment, which would have implied a temporary discontinuance of his work and a strict avoidance of exposure to wet and cold, there is reason to believe that he would soon have been restored to health. The poor man, however, did not apply for assistance until the disease had become chronic, and had advanced beyond the stage at which treatment could be of any avail. The most interesting point in this case is the observation of the first appearance of the "waxy" casts in the urine, their mixture with the granular casts, and subsequently the increased number of the former in proportion to the latter; their appearance in the urine being, doubtless, simultaneous with the deposit of the wax-like material in the kidney, and this material being probably secreted by those tubes which had previously lost their epithelial lining.

The following case, in some points, resembles that of Revels; but in other respects it differs materially. It possesses a peculiar interest.

Case IV.—*Numerous attacks of Gout—Chronic Desquamative Nephritis—Urine Albuminous—A very few Waxy Casts—Almost Complete Suppression—Urinary Tubes denuded—Renal Arteries and Malpighian Capillaries thickened.* Thomas Hewson, æt. 49, a coachman, had always drunk freely of porter—on an average half a gallon daily. At the age of twenty-five, he had inflammation of the chest; and during this attack he was first seized with gout in one great

too. About three or four years after this, he had a second attack; since which the attacks had returned with increased frequency, and had at different times affected almost every joint. For several years before his death, he was disabled by gout for about nine months in each year; his diet had consequently been very poor. This is one amongst a great number of instances, with which I have met, in which a labouring man has brought upon himself and his family long-continued severe suffering and privation by an intemperate use of London porter. I attended him frequently as a dispensary patient, for attacks of gout, before I had any suspicion of renal disease.

June 7th, 1849. I examined the urine. It had a specific gravity of 1015; it was pale, and deposited a very slight cloud, containing a few well-defined "large waxy casts," similar to those observed in the preceding case, but very much less numerous. Scarcely a particle of renal epithelium could be seen. The urine contained a large quantity of albumen, becoming almost solid when boiled. The patient was of rather small stature; his hair and whiskers were sandy; his face pallid; he was considerably emaciated. During the last two years, the legs had occasionally become œdematous after sitting up; and the face had sometimes been slightly swollen, but there was now no appearance of dropsy. A short time since he had an attack of gout; but he now complained chiefly of weakness, which confined him to bed. The joints were free from deposits and distortions, except a slight contraction of the fingers of one hand. His wife observed that, during the earlier attacks of gout, the urine was generally high-coloured and turbid, but that latterly it had remained pale and free from deposit. He was ordered to take small doses of tincture of sesquichloride of iron.

June 18th and 27th. The urine was examined, with the same results as before.

July 3d. During the last fortnight, he had become deaf. He was much changed in appearance; he sometimes appeared confused in his intellect; the limbs frequently moved in a chorea-like manner. He was very pale and thin, and complained of an acrid taste in the mouth. His breath was fetid; he had occasional bleeding at the nose; there was frequent vomiting. The urine was scanty; the quantity obtained was insufficient for ascertaining its specific gravity; it was highly albuminous, and threw down a rather copious dense precipitate, of a whitish brown colour, composed of numerous *waxy casts varying in diameter from* 1-375 *to* 1-750 *of an inch*. There was no epithelium, either entire or disintegrated. He was ordered to have an effervescing draught every four hours.

July 7th. He was worse; had frequent vomiting and severe headache. He had passed only about two ounces of urine during the last twenty-four hours. It was light coloured, very albuminous, and had a very slight sediment, containing traces of the same casts as before. The effervescing draughts were repeated; and a quarter of a grain of elaterium was prescribed, to be taken immediately.

July 10th. He was much the same. The urine amounted to about four or six ounces in twenty-four hours. Yesterday its specific gravity was 1016; this day it was 1019; it was pale, highly albuminous, and had a very scanty sediment, with traces of the same casts as before.

July 14th. He was much the same, but more exhausted, and very pallid; the skin was cool. He became suddenly faint; and died soon after my visit, retaining his consciousness and power of speech until within a few minutes of his death.

Post-mortem Examination on the fourth day after death. The weather being warm, and putrefaction having commenced, the kidneys were removed by an opening in the abdomen; no other parts were examined. Both kidneys had much the same appearance. Their size was rather less than normal; one weighed 3¼ oz. The surface was smooth. In the cortical substance of one, there was a cyst about the size of a horse bean. They were slate-coloured, from incipient decomposition. The chief structural change visible to the naked eye consisted in the absence of the usual lobular appearance on the surface. The cortical substance was rather thin; but an unpracticed observer might have

pronounced the kidneys healthy. On a microscopic examination, the Malpighian bodies appeared very conspicuous, while the tubular structure was confused and indistinct. After the addition of acetic acid, the tubes became much more distinct; many were denuded and atrophied. Scarcely one could be seen with the normal epithelial lining; some contained oil; others, brown granular particles of disintegrated epithelium; and a very few contained the white waxy material, which had formed the casts observed in the urine during life. In consequence of the atrophy of the tubes, the Malpighian bodies seemed relatively more numerous, and closer together than ordinary; they were not perceptibly enlarged; one of the largest measuring 1-75th of an inch. The Malpighian tufts were of a dull white colour: the surface of the vessels was smooth, their coats thickened, their canals clearly visible in many instances, especially after adding acetic acid, which also brought into view the blood-corpuscles in their interior. The coats of the arteries were hypertrophied; and the canal of one contained some small masses of oil.

Remarks. There can be little doubt that the morbid process in the case of Hewson was essentially the same as in that of Revels; and that the urine, if examined at an earlier period of the disease, would have presented the granular casts, which an examination of a great number of cases of this disease has shown to be quite characteristic. In this case the desquamative process had continued until nearly all the tubes had lost their epithelial cells; and, then, as a necessary consequence, secretion was almost completely arrested. There was one remarkable difference between the two cases; the wax-like material, which was deposited so abundantly in the kidneys of Revels, was, in the case of Hewson, only just sufficient to afford the data for a correct diagnosis and prognosis.

Immediately after the case of Hewson, another essentially like it occurred to me in a woman named Brooks. The urine had the same characters, and contained the peculiar large waxy casts. The kidneys presented the same general and microscopical appearances.

When the urine is pale, and of rather low specific gravity, containing a large quantity of albumen, with a scanty sediment, composed of the peculiar large waxy casts, as before described, with little or no epithelium, either entire or disintegrated, it may be almost certainly inferred that the chronic desquamative process has destroyed the secreting cells of the kidney; and that if urgent symptoms of suppressed secretion are not already present, they will very speedily appear.

I have several times spoken of the waxy casts as being "large," and I have given the diameter of those observed in the urine of Hewson. My reason for doing so has been, that as the diameter of these casts was equal to the average diameter of healthy kidney tubes, *their size was sufficient evidence that the tubes in which they had been moulded had no epithelial lining, and were composed only of basement membrane*, as the post-mortem examination of the kidneys proved to be the case.

I will now give the particulars of a case in which what I propose to call "*small* waxy casts" were observed, and which formed the ground of a favourable prognosis, which the result proved to have been correct.

Case V.—*Intemperate Habits, with an insufficiency of Nutritive Food—General Dropsy—Ecthymatous eruption over the body—Urine highly albuminous, and containing "small waxy" Casts—Recovery.* George Henry Lewis, aged 45, of intemperate habits, much reduced in circumstances, and latterly living very badly, was admitted into King's College Hospital, under the care of Dr. Budd, on the 6th June, 1849. He was suffering from general anasarca and ascites in a very great degree, and his body was covered with an ecthymatous eruption. He was very pallid; his breathing was difficult, and accompanied by a wheezing sound. The dropsy had appeared two weeks before, and the eruption a month earlier. The sounds of the heart were normal. The urine was scanty, rather light coloured, somewhat cloudy, of specific gravity 1012, becoming almost solid with albumen when boiled. After standing it deposited a pretty abundant whitish dense precipitate, chiefly composed of *transparent waxy casts, about one-thousandth of an inch in diameter.* Very few epithelial cells were seen, and no blood-corpuscles, or very few.

Few, probably, who saw the miserable condition of this poor man at the time of his admission, would have given a favourable prognosis: but after a microscopical examination of the urine, I ventured to suggest to my friend Dr. Budd the probability of his patient's recovery, for the following reasons. The appearance of the casts seemed to indicate merely congestion of the Malpighian capillaries, and an absence of disease in the epithelial cells. The diameter of the casts proved that they were moulded in canals lined by epithelial cells; in this respect forming an instructive contrast with the casts in Hewson's case. The almost entire absence of epithelial cells from the urine showed that the secreting structures were but little involved; since any morbid matter in the blood, injuriously affecting the secreting cells, would have produced a desquamation of these structures. The inference was that the blood was in such a morbid state as produced congestion of the Malpighian capillaries, while it affected but slightly, if at all, the secreting cells of the kidney. As a consequence of the congestion, coagulable matter with serum escaped from the Malpighian vessels, and, after being moulded in the tubes, was washed out with the urine, forming the "small waxy casts" already described.

He was first put on milk diet, and was ordered to have a tepid bath every morning, and to take small doses of solution of citrate of ammonia, with fifteen minims of ipecacuanha wine every six hours. He began to improve almost immediately. It may be well to mention here, that for several years he had been subject to epileptic fits, which returned with increased frequency while he was suffering from the dropsy.

The urine was frequently examined, and its condition carefully noted. The albumen continued very abundant for about six weeks. The quantity passed in twenty-four hours did not exceed one pint when he was first admitted, but soon became more abundant, and for some days exceeded the normal quantity. Thus, on the 18th June, it measured five pints. In this increased flow of urine, following upon a scanty secretion, the case resembled one of acute desquamative nephritis.

June 25th. It was now first noted that some of the casts entangled a few oil-globules, and here and there appeared a cell containing oil. These appearances continued for about three weeks, and occasioned some anxiety lest the kidneys should undergo fatty degeneration; the more so as the albumen was still very abundant.

About the middle of July, the oil was evidently diminishing, and the casts were less numerous; but the albumen was as copious as at the commencement. The specific gravity of the urine was 1014.

July 26th and 27th. The albumen was reported to be much less, so that there was scarcely more than opalescence when the urine was boiled. The urine was clear; there was no cloud or sediment after standing, nor anything visible by the microscope. In the mean time, the eruption and the dropsy had entirely disappeared, his appetite and strength had returned, and the pallor of his face had been replaced by a healthy hue. Since the 26th June he had been taking steel, sometimes in the form of citrate, and occasionally in that of tincture of the sesquichloride.

July 30th. He was progressing favourably; had improved in all respects. The bowels were regular; the tongue clean; he slept well. The urine was scarcely albuminous.

August 1st. He left the hospital without leave, and has not since been heard of.

Remarks. It is instructive to compare the history of this case with those of Revels and Hewson. In appearance, the condition of Lewis, when he first came under observation, was much more desperate than that of the other two. The microscope was the only means of determining that the probability of recovery in each case was precisely the reverse of that which, to a superficial observer, it might appear to be.

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19. *Diagnosis of Fatty Degeneration of Kidney.*—[Dr. Geo. Johnson makes the following remarks on the Diagnosis of Fatty Degeneration of the Kidney;—one of the most intractable, and unhappily one of the most frequent of the forms of renal disease.]

The urine, in cases of fatty degeneration of the kidney, has characters sufficiently distinctive to render the diagnosis a matter of ease and certainty. It is commonly of a rather pale, yellowish colour. When first passed, it is clear; but, after standing for some hours, it usually deposits a light, cloudy sediment; sometimes, in the early stages, the urine has a dark smoky colour, from containing blood. The quantity secreted is less than normal, and its density in most cases exceeds the healthy standard; it is by no means unusual to find the specific gravity ranging from 1025 to 1030. The albumen is generally very abundant, so that, when boiled, the urine becomes almost solid. On a microscopic examination of the cloudy sediment before mentioned, there may be seen transparent casts of rather small size, in many of which are entangled oil-globules of various sizes, also cells containing oil-globules in greater or less abundance. There are besides scattered cells, more or less completely filled with oil. I might transcribe from the pages of my note-book many cases, in which the urine has presented more or less of the characters here described, and in which not one of the patients has recovered. The majority of these cases have terminated fatally; while, in a few instances, the symptoms continue in a greater or less degree; the urine continuing highly albuminous, and presenting unequivocal microscopical evidence of the true nature of the disease. For the purposes of prognosis, it is as important to distinguish between a case in which the urine presents the characters here described, and a case of simple desquamative nephritis, as it is to distinguish tubercular disease of the lung from acute pneumonia or bronchitis.

Now, since the prognosis in a case of confirmed fatty disease of the kidney is thus unfavourable, it is important that all who examine the matter should clearly understand that albuminous urine may contain a certain amount of oil, entangled in fibrinous casts, or enclosed in epithelial cells; and yet the disease may be of a simple nature, and may speedily terminate in recovery. It is very common to find small quantities of oil in the casts and in the cells, after a simple inflammation of the kidney has existed for three or four weeks. Now, since an inflammatory disease does in some instances become chronic, and terminate in confirmed fatty degeneration, the appearance of any oil in the urine must occasion a certain degree of anxiety, lest it should increase in quantity, and take the place of the simple inflammatory products. In the case of Jervis, it will be remembered that oil was seen in the casts and in cells, that it continued for several days, and then entirely disappeared simultaneously with a rapid decrease in the quantity of albumen. The following brief notice of a case will serve as an example of what may frequently be observed.

Acute Desquamative Nephritis, with general Dropsy—Urine scanty, highly albuminous, and containing fibrinous Casts, Epithelium, and Blood—subsequently oil in the Casts and Cells—Complete Recovery. John St. Ledger, aged 49, a billiard-marker, applied to me at the Dispensary on the 12th April, 1847, and gave the following account of himself. During the period of Lent, he had fasted very rigidly, *i. e.* during four days in the week he took only one meal a day, composed of fish, with milk and potatoes; during the remaining three days he took animal food as usual, perhaps rather in excess. Under this plan of diet he found himself getting thin and weak, and he became very dyspeptic and flatulent after his meals. On Easter Monday, April 5th, he felt drowsy, and had muscular pains. The next day, dropsical swelling appeared, and the urine was very scanty. He continued to get worse until the 12th April, when he first came under my notice.

There was then slight general dropsy, headache, and drowsiness; the urine was scanty, high-coloured, and very albuminous. It presented the characteristic appearances of simple acute desquamative nephritis; containing fibrinous casts, entire epithelial cells, and blood-corpuscles. During the first few days he was much benefited by cupping, warm baths, purging, and diaphoretics.

A careful microscopical examination of the urine was made almost daily. Its characters remained the same until the 29th April, when, for the first time, it was seen that many of the epithelial cells contained oil-globules. At that time, I knew much less of the history of this disease than I now do; and I quite despaired of my patient's recovery. Day after day the oil was visible, some cells

being completely filled with it; but, at the same time, *by far the greater number of cells were entirely free from oil*, and this is the circumstance which, with my present knowledge of these cases, would have suggested to me a favourable prognosis. Early in the month of May the dropsy disappeared, but the patient continued very weak and pallid.

May 6th. He began to take a draught three times daily, consisting of diluted nitric and diluted hydrochloric acids, ten minims of each, in infusion of quassia.

May 31st. The above medicine was discontinued, and he took an ounce of compound mixture of iron three times daily. Soon after the change of medicine, he began to gain strength, and to improve, in every way, very rapidly.

June 14th. The quantity of urine was three pints in twenty-four hours; of specific gravity 1017; the colour was natural, the albumen much diminished. It contained a few casts, with epithelium more or less disintegrated, and scarcely a trace of oil.

At the beginning of July, the urine was free from albumen, and presented no trace of oil, but a very few casts with disintegrated epithelium; he was gaining strength, and was much improved in appearance. Once after this, there was a temporary return of albumen, but it soon disappeared, and he completely regained his health and strength. He has occasionally since been under my care for trifling ailments; I have several times examined the urine, and have found it, in every respect, quite healthy.—*Lond. Journ. Med.*, Feb. 1851.

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20. *On a Species of Atrophy of the Spinal Marrow.* By Dr. Namias.—A woman, æt. 48, was admitted into the Venice hospital, who had suffered from paralysis of the lower extremities during three years, of the origin of which she could give no account. She possessed no voluntary power over them, and the upper extremities were also in a state of semi-paralysis and constant flexure. She was submitted to electricity during three months, and recovered power sufficient to enable her to walk slowly about the ward, the flexure of her fingers continuing. Some months after, her power again declined, but she was again improving under the use of electricity, when she was eventually carried off by diarrhœa in the cholera season.

At the *post-mortem* examination, the spinal marrow was found flaccid; and hollowed out in its substance was a cavity extending from the first cervical vertebra to within two fingers' breadth of the *cauda equina*. A catheter of medium size could enter this cavity, which occupied the centre of the medullary cord, the absence of the central gray matter giving rise to its production. Cruveilhier has noticed this absence of gray matter in children dying with spina bifida; and Morgagni relates the case of an adult, in which the cavity was large enough to admit the end of the little finger, but extended for a far less distance than in the present case.

Dr. Giacinto Namias observes, in reference to the improvement of the paralyzed limbs which resulted from the use of *electricity* in this case, that it is only one out of many examples of such improvement being produced even in cases wherein serious organic lesion existed; so much so, that by its patient and *prolonged* employment, voluntary movement has often been procured in cases in which the causes of the paralysis were absolutely irremediable.—*Rev. Med.-Chir.*, viii. p. 133.

The important resources derivable from the persevering use of galvanism, in cases of paralysis which have resisted all other means, have been frequently demonstrated by M. Duchenne, who, having had the principal hospitals of Paris freely thrown open to him during the last five or six years, has acquired a remarkable dexterity in its application. As he is about to publish a work upon the subject, detailing the results he has attained in respect to the diagnosis and treatment of the different forms of paralysis, we will only state here, that his plan consists in *localizing* the galvanic action upon the different muscles, which, by the employment of moistened excitors of a great variety of form and size, he believes he can do with the greatest nicety. He has derived few satisfactory results from *indirect muscular galvanization*, or acting upon the muscles through their nervous trunks. When he wishes to localize galvanic action upon the *skin*, he previously dries it with an absorbent powder, and passes over

the surface dry metallic excitors, the sole result being the various degrees of sensation according to the intensity of the currents and duration of the intermissions.—*British and Foreign Medico-Chirurgical Review*, January, 1851, from *Archiv. Générales*, tom. xxiii. p. 420.

21. *Vaccination as a Preventive of Small-pox.*—Dr. Alexander Knox concludes a highly interesting paper on the existing state of our knowledge of vaccination and revaccination as preventive of small-pox (*Lond. Journ. Med.*, Dec. 1850), with the following practical deductions, suggested by a careful reconsideration of the subject, and which are well calculated to reassure confidence in the protective influence of cow-pox.

"1. It appears to have been satisfactorily demonstrated, that secondary vaccinations have succeeded in a considerable proportion of the cases in which they have been resorted to.

2. It also appears that small-pox has prevailed of late years to an increased extent.

3. The results in question have been attributed, partly to a diminution of energy in the vaccine infection, caused by repeated transmission through the human subject, and partly to the alleged tendency of the immunity conferred by cow-pock, to wear out of the system, after an uncertain period from the date of vaccination.

4. Both the success of revaccination, and the increased prevalence of casual small-pox, appear, however, to have been exaggerated in the popular belief; and, at any rate, the facts seem explicable, in a great measure, without resorting to the hypothesis just stated, by attributing them in part to the imperfect performance, or the entire neglect of vaccination; in part to the temporary tendency to increased diffusion, at distant and uncertain periods of time, which characterizes all epidemic diseases; and, finally, to peculiarities of constitution, which render many individuals absolutely insusceptible of being protected against a secondary attack, either by vaccination or by inoculated or natural small-pox.

5. It has been proposed to re-introduce variolous inoculation as a certain remedy for the occasional failure of vaccination; but the superior efficacy of the practice is not only questionable, but its indiscriminate employment has been proved to be dangerous, and destructive of human life, and is therefore highly to be deprecated.

6. Revaccination, however, may be prudently recommended, not only as innocuous in itself, but also, on various grounds, as positively advantageous, even by those who question the gradual extinction of the protective influence of cow-pock.

7. It does not appear that genuine vaccination has lost any of the efficacy which at any time really appertained to it; and it still remains to be demonstrated that it is not capable of conferring, to the end of life, complete immunity from the horrors of small-pox, on a large majority of all the individuals fully submitted to its influence.

8. Even where vaccination fails to prevent a secondary attack, the consecutive disease, in general, assumes a mild and modified form, although, in some instances, it may be sufficiently severe to leave the countenance marked with scars, and still more rarely to terminate in death: but fatal cases from secondary small-pox do not seem to be more frequent after vaccination than after a primary attack of the natural disease.

9. On the whole, it is respectfully maintained that cow-pock, imparted in the most efficient manner of which it is capable, by vaccination, and, under certain circumstances, by revaccination, is the most eligible safeguard within our power against small-pox; and that it will prove effectual in most constitutions, not inherently insusceptible of protection, by any means whatever."

22. *On Vaccination and Revaccination.* By M. Craninx.—An interesting discussion has lately taken place, at the Belgian Academy of Medicine, upon the subject of vaccination. The following were the conclusions of M. Craninx, the reporter, which were affirmed by the academy: 1. Variola and varioloid

are but degrees of the same affection. 2. Simple variola may attack the same individual twice, but scarcely ever in rapid succession (*coup sur coup*). 3. It may also attack persons who have been properly vaccinated, but it is then generally mitigated. (M. Lombard observed that the word "generally" must be dwelt upon; for subjects who, to all appearance, have been well vaccinated, at a distant period occasionally die from variola. He added, that in the dreadful epidemic which has just devastated Liege, this was the case, while none of those who underwent revaccination took the disease.) 4. Variola, after vaccination, is almost without example within the next ten years; but it is observed from time to time in those who have been vaccinated for more than twenty years. It is, however, very rare after forty. 5. It is of more frequent occurrence, but, at the same time, milder, in the vaccinated, than in persons who have already undergone an attack of it. 6. Varioloid is observed oftener than variola after vaccination, and is not unfrequently observed in children; but it increases both in frequency and severity from ten to twenty-five or thirty years. 7. Variola and varioloid in the vaccinated, not following the same course in respect to frequency or intensity as in the non-vaccinated, the cases in which they are seen among the former cannot all be explained upon the supposition of a faulty vaccination, but upon that of a diminution of the preservative action of vaccination. 8. Perhaps we should admit incomplete vaccinations possessed of a less degree of preservative power, and capable of becoming sooner exhausted. In this point of view, sufficient importance is not attached to the general reaction which should accompany the vaccine eruption, indicating the action of the virus upon the general economy. 9. If the protective power of vaccination has become enfeebled by time, if not in all, at least in several individuals, there is not sufficient evidence to show that the vaccine, considered in itself, has lost its efficacy since the first years of its discovery. While there is doubt, it is better to revert to the cow-pox whenever the opportunity presents itself. (Upon this resolution, M. Seutin remarked that, believing as he did, that the vaccine lymph which existed is efficient, and that it fails either from not having been taken well, or owing to individual susceptibilities, he considered this conclusion would spread needless alarm. M. Lombard observed, however, that the new cow-pox, recently imported from England, certainly exhibited a more certain and more active effect.) 10. As the immunity conferred by vaccination is not indefinitely absolute, revaccination, at least for a great number of individuals, is rationally indicated. 11. Observation shows, that when it succeeds, the second vaccination produces phenomena very nearly like the first, so that we would, *à priori*, anticipate the same effects from it. 12. Experience has determined this point: it has proved that a recent revaccination preserves from variola and varioloid, and that, practiced on a sufficient scale, conjointly with vaccination, it constitutes a sure means of arresting the progress of this malady when it appears epidemically. 13. It succeeds best in proportion as it is most required, that is, the more remote the period is since the individual has had variola, or has been vaccinated. 14. If it does not succeed at a first attempt, it should, if necessary, be repeated several times. 15. During the prevalence of an epidemic of variola or varioloid, it is prudent to revaccinate all those whose first vaccination dates ten years back, and all those whose first vaccination gives rise to any doubt. 16. Revaccination may be performed almost indifferently with the lymph of a primary or a secondary vaccination. 17. It is imprudent to inoculate with the lymph of spontaneous varioloid; nevertheless, in the time of an epidemic, if vaccine lymph could not be possibly obtained, we should be authorized in the employment of this fluid, and to transmit it as we do vaccine lymph. 18. If revaccination is so useful a thing, at least for a certain number of persons, vaccination loses none of its importance; and the government and the profession should exert all their influence to enable the entire population to participate in its benefits.—*Gazette Médicale de Paris*, No. 27.

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23. *Results of Revaccination in the Prussian Army during* 1849.—During the year 1849, there were 51,637 individuals revaccinated, of whom 39,116 had

distinct cicatrices of the former vaccination, 8706 had these in an imperfect condition, and 3815 were destitute of them. The vaccination

Pursued a regular course in	30,457
An irregular one in	8,467
And failed in	12,713
Succeeded on repetition in	2,862

Thus, then, of the 51,637 vaccinations, 33,319 were quite successful; vesicles running a normal course being produced. This proportion, amounting to 64 per cent., is nearly 1 per cent. more than was obtained in 1847 and 1848.

Of the different forms of variolous disease which appeared in the army throughout 1849, only 62 cases occurred, and were distributed as follows:—

	In persons not revaccinated.	Revaccinated without success.	Revaccinated with success.	Total.
Varicella	2	6	5	13
Varioloid	14	17	9	40
Variola.....	6	2	1	9
	22	25	15	62

In almost every case the disease ran a mild course, and frequently was quite insignificant. One case only was fatal. A recruit vaccinated when a child had not yet been revaccinated, and died on the 10th day.—*British and Foreign Medico-Chirurgical Review*, January, 1851, from *Med. Zeitung*, 1850, No. 19.

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24. *Abortive Treatment of Variola by the Application of Collodion.*—Collodion has been found useful in arresting the course of traumatic erysipelas and of herpes: and the *Bulletin Général de Thérapeutique* for Oct. 30, 1850, contains an account of a case occurring in the practice of M. Aran, which seems to show it to be an efficient agent in producing abortion of the variolous pustules. We abridge the account given.

Case. A young man, aged 19, was admitted into the Hôpital Bon-Secours, in Paris, with confluent small-pox in an early stage. The face was thickly covered with small pustules, and there was already intense swelling and redness. The fever was very moderate. M. Aran applied a layer of collodion over the face, to produce abortion of the pustules. In two days, the lips, and lobes of the ear, which had not been covered, showed well-developed pustules; while scarcely anything could be seen through the collodion, and, on raising it, the pustules were found arrested. The collodion having become accidentally removed in parts, the exposed portions of the face, in fifteen or eighteen hours, presented well-developed pustules. It was again applied, and constantly watched, to prevent the patient from tearing it off during his delirium. On the eighth or ninth day from the first application of the collodion, it began to fall from the eyebrows, leaving them of a rose colour, without any scars. On the following days, the collodion fell from the other parts of the face, together with the desquamated epidermis. The skin of the face appeared as if it had undergone desquamation after erysipelas. On the other parts of the body, the eruption, which had been very confluent, had left numerous spots and scars. The general condition of the patient was most satisfactory.

Collodion seems to act as a mechanical constringent of the tissues. This view is supported by the fact that, in the latter days of the suppurative stage, the pustules were seen to appear at the edges of the layer, and to raise it, while nothing of the kind was observed elsewhere. M. Valleix has also used the same remedy in a case of *variola discreta*, with perfect success; and in a case of non-confluent small-pox, M. Aran has procured the abortion of almost all the pustules on the face, so as to render it extremely difficult to find a mark.—*London Journ. Med.*, Jan. 1851.

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25. *Combination of Auscultation and Percussion.*—Dr. Roger has called attention to a process, first pointed out by Laennec, in which percussion and auscultation are combined. A solid cylinder of cedar-wood is used for auscultation, while a person well versed in percussion practices it round the stethoscope,

and in the entire extent of the region to be explored. In this manner, we can not only determine the limits of an organ, as of the heart, liver, spleen, or veins, but also those of the cavity which contains any of them.

This process, though possessing incontestable advantages, is opposed by two serious inconveniences. The first is, the dexterity required to enable us to appreciate the result. M. Roger was six weeks in acquiring this power. The other objection is, the difficulty of introducing into private practice, especially in the country, a process which requires the aid of a second person. The method, however, would be valuable in cases of difficult diagnosis, and in which great precision is required in determining the therapeutic indications. —*London Journ. Med.*, Dec. 1850, from *Comptes-Rendus de la Soc. Méd. des Hôpitaux*, April, 1850.

26. *On Auscultation in the Pneumonia of Infants.* By MM. Trousseau and Lasègue.—The authors preface their essay by some observations upon auscultation of infants in general, which they consider to be far more difficult than is usually supposed. The restlessness and cries of the child confuse the results; and the small space to be operated upon, with the inconvenient position to be assumed, prevents the prolonged examination which is necessary. When we are in no doubt as to the nature of the disease, its limits often cannot be ascertained, for an abnormal sound, whensoever it may arise, is heard all over the chest. Both normal and abnormal sounds are, therefore, best heard where the ear can be most conveniently placed, namely, *opposite the subscapulary fossa*. From the *resonance* of the cry little is to be learned, and the *souffle* of the child is indistinct. The comparative exaggeration and feebleness of the respiration in different parts of the chest are seldom to be observed, and the exaggerated sound of one lung when the other is bad—puerile respiration—is comparatively wanting in the child. Most is to be learned from the *râles*. The *crepitant* is very rare, and has not the fineness or the dryness of that of the adult, the *subcrepitant* and *sibilant* being those usually present. Their temporary absence does not indicate the absence of lesions, for the subcrepitant *râle* may cease for minutes or even hours, and return again, no apparent cause for the oscillations being observable.

The pneumonia of infants is never an original affection, being always preceded for a longer or shorter time by bronchitis; and it is very important to seize the point of transition of the one into the other, as the implication of the parenchyma so much adds to the danger. Bronchitis may exist only for a short time, or for months, before being followed by pneumonia. Indeed, there are two forms of it; one in which *pneumonia necessarily follows*, and the other in which it is a mere *coincidence*. In the first case, there is much more fever present than the local symptoms seem to warrant, and the cough is dry without *râle*, the first sound that is heard being the subcrepitant *râle* of the pneumonia, two or three days after the bronchitis has existed. In the other case, the catarrh passes through its usual stages, having the large mucous or sibilant *râles* present, the subcrepitant *râle* appearing suddenly among these, and not the one gradually becoming fused into the other. In general, the sibilant *râle* gives way to a mucous one of short duration, prior to the occurrence of the subcrepitant rhonchus. Whenever bronchitis, characterized by cough and fever, does not manifest its auscultatory signs, pneumonia is imminent; but when mucous or sibilant *râles* have been heard for some time, the subcrepitant *râle*, when it occurs, has no longer the same importance. Sometimes, indeed, the subcrepitant *râle* is never present, the *souffle* alternating with the mucous. In other cases it may accompany the disease in all its stages; and in some that run a rapid course, especially in rickety children, the disease may terminate fatally without any other having become developed. Whenever it ceases completely, without being replaced by any other form of rhonchus, the general symptoms still continuing menacing, the augury is very bad. If, on the other hand, it persists, though the respiration be easier, the fever less intense, and the countenance less anxious, the amelioration cannot be relied on, for it is only a truce. This *râle* is larger, the more superficially the affected lobules are situated, and is smaller when they are more central. When the hepatized

tissue is found highly coloured, it has persisted to the last; but when this is pale, it has usually given way, prior to death, to other signs. It is no measure of the more or less advanced stage of the lesion.

The *souffle* in hepatization, at first soft and veiled, becomes eventually almost as distinct as in the adult, being either accompanied by the subcrepitant *râle*, or alternating with it. It may disappear for short intervals, and undergoes some change from posture. It is one of the most certain signs of the disease, and if the patient dies without its being developed, this is because his prior state of health or some other general accident has complicated the case. It indicates that hepatization occupies an extensive portion of the parenchyma; and by practice its intensity becomes a measure of this. Neither it nor the subcrepitant *râle* indicates the degree of the change, though they may its extension—different parts of the lungs, in fact, undergoing simultaneously a very different degree of change. The *souffle* appears early in that form of the disease in which contiguous inflamed lobules unite and invade a whole lobe or contiguous lobes; while in the form in which the hepatized lobules are dispersed over almost the entire lung, so as to unite nowhere into such large masses, although constituting a great aggregate, the *souffle* appears later.

As in the adult the sign of improvement is a returning crepitation, so is the returning mucous *râle* in the infant, displacing the *souffle* and subcrepitant *râle*, though it may reappear without the intervention of this last.

All the auscultatory phenomena are never entirely wanting during the whole course of the disease, but any one of them may be so, even in cases of such severity as to lead to the full expectation of their presence.—*British and Foreign Medico-Chirurgical Review*, January, 1850, from *Archiv. Générales*, t. xxiv. pp. 130-42.

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27. *Local Paralysis in Infancy.*—Dr. Simpson called the attention of the Edinburgh Obstetrical Society to the frequency of local paralytic attacks during infancy and childhood, and pointed out the following circumstances as the most important points in their history:—

1. The paralysis most frequently seems to affect a single limb—as one leg or one arm—sometimes a few fingers only; occasionally it appears in the form of hemiplegia, affecting one whole side; sometimes in the form of paraplegia. Dr. S. mentioned a case in which the paralysis occurred in early infancy, and affected both lower extremities, the left upper extremity, and the left side of the face, the child, now several years old, being very acute and intelligent. 2. The side of the face, but more particularly the upper and lower extremity, when paralyzed in infancy, do not grow in relative proportion with the corresponding healthy parts; so that, when the individuals affected reach adult life, the paralyzed extremity appears small, diminutive, and shorter than natural. 3. The paralyzed limb does not appear to want sensation, and the motory muscular power, although greatly diminished, is not entirely abolished. When the local paralysis is seated in the leg, the person hence usually walks imperfectly, throwing out the foot at each step with a flap-like motion, and often with the toes or external surface of the foot somewhat drawn in, as the leg is each time extended. 4. The disease generally comes on during the first three years of life, and especially during the currency of that morbidly irritable state of the nervous system which co-exists with teething. Dr. S. had seen an instance in which two children of the same family were affected within a week of each other. 5. The disease generally supervenes very suddenly, sometimes in the course of a single night, and is often, at the time of the attack, accompanied with little or no constitutional derangement; but occasionally it comes on with a fit of convulsions or other symptoms of some temporary cerebral derangement. 6. The affection is frequently first noticed immediately after fever, especially after the eruptive fevers; and occasionally it comes on during the period of convalescence from them. Dr. S. described a case of paraplegia in a child three years old, which came on during the convalescence from scarlatina—the patient going to bed apparently well, and waking paraplegic, and astonished at her own want of power of movement in both her legs. Intestinal irritation in some cases appears to be the exciting cause. 7. When the patients do not recover from

the paralysis within a few days after the attack, under antiphlogistic measures (when the state of the system has allowed them), and careful correction of the condition of the intestinal canal and other functions, the paralytic affection almost always proves chronic, and, indeed, permanent. Dr. S. had seen counter-irritation to the spine, galvanism, &c. &c., employed, but without success. He had seen three instances in which small and long-continued doses of nux vomica had appeared to act beneficially in diminishing the state of paralysis. Keeping all the functions of the body as near the standard of health as might be, friction and bathing of the affected limbs, and inculcating as much muscular exercise of them as possible, seemed to be the principal indications of treatment, when the disease had already passed into the chronic type. 8. The true pathology of the disease was as yet little known, though the affection was of frequent occurrence. No autopsic investigations appear to have been made with the view of ascertaining the state of the brain, spinal cord, and nerves, in the local paralysis of infancy.—*Monthly Journal of Medical Sciences*, Jan. 1851.

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28. *Recent Epidemic of Scarlatina at Berlin.*—Dr. Helfft states that the scarlatina which has lately prevailed epidemically in Prussia, and other parts of Germany, has presented several anomalous features, which he deems it his duty to lay before the profession.

In many cases all the symptoms of scarlatina except the eruption were noticed in members of the same families among whom the fully developed disease was present.

In very many patients the disease assumed a malignant character; and here the surface was pale, or the skin presented a dark purple colour, and in others was studded with petechiæ. In these cases the temperature of the surface of the body was much lower than natural. The pulse was small, frequent, and sometimes intermittent. The fauces were of a dark red colour. The tonsils presented deep ulceration, by which they were partially or totally destroyed. Diphtherite was frequently observed, spreading over the upper part of the pharynx and the fauces, extending to the Eustachian tube and the posterior nares, and accompanied by a copious acrid and fetid discharge from the mouth and nostrils. The tongue, at first of a dark red colour, its papillæ enlarged, soon became covered with black sordes, which also coated the lips. The lymphatic glands in various regions of the body were swollen and inflamed; those of the neck were swollen in every case; and sometimes the inflammation of these glands proceeded to suppuration and wide-spreading ulceration, extending into the pharynx and adjoining parts. Inflammation of the conjunctiva, with ulceration of the cornea, was noticed in some cases. Œdema of the integuments and effusion into the cavities were seldom met with. In one case hemorrhage from the nose, mouth, and intestinal canal occurred; and in all the worst cases the evacuations were of a black or dark green colour. The urinary secretion was suppressed in the beginning of almost every case; towards the close, however, it passed involuntarily. In one case, in which after death distinct degeneration of the kidneys was found, no albumen could be detected in the pale and copious urine; its sp. gr. was 1010.

The kidneys in almost every case were found enlarged, or acutely inflamed; but the granular or Bright's disease was not observed. The liver was paler than natural. In one case the spleen was observed of a yellowish colour, and infiltrated with pus. In another case, attended with swelling of the upper extremities, the glands of the axilla were found enlarged and containing pus. The lungs were free from disease. The pleuræ presented ecchymoses. Various pathological changes were found in the intestinal canal, *e. g.*, softening of the mucous membrane, ulceration of the mucous membrane of the ileum, paleness of the membrane in other portions of the intestines. In most cases the ileum and colon were of a dark colour, varying through several shades, from green to deep black.

The treatment, at first of a tonic character, was not successful; a change to small doses of calomel, as advised by some English authors, was found very serviceable. Subsequently when hemorrhages occurred, bark and acids were

employed. Nitrate of silver was applied to the local diseases.—*London Med. Gaz.*, Dec. 1850, *Zeitschrift für die Gesammte Medicin.*

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29. *Cretinism.*—A recent communication on this subject by M. Boudin, founded on the report of the Sardinian Commissioners, is published in the *Archives Générales*, September, 1850. This commission defines cretiniam to be "a degeneration of the human species, which manifests itself in different parts of the globe, and characterized by idiocy, more or less pronounced, associated with malformation of the body." It has been observed in Europe in the Alps, the Pyrenees, the Jura, the Hartz, and the Carpathians; in America, in the Cordilleras; in Asia, in the Himalayas; and in the mountainous districts of Tartary.

Sometimes the affection appears at birth, but generally no sign of the cretin appears till subsequently. The stature is seldom over four feet, many do not surpass three feet six. They are generally thin, with tawny skin, and a countenance expressive of a brutal deficiency of intelligence. The head is misshapen and out of proportion; the muscular strength is below par; the articulation imperfect. The cretin has few diseases; pellagra is, however, not unfrequent in the valley of the Po.

As far as the commission could gain information, season had no influence on the propagation of cretins. Other statistical facts, of more or less interest, are as follows:—

Cretinism declared itself—

Between birth	and	the age of	2	years in	4,440
" 2	"		5	"	187
" 5	"		12	"	202
" 12	"		20	"	31
Above 20	"		—	"	28

In goitrous cretins, the goitre commenced—

Between birth	and	the age of	2	years in	2,333
" 2	"		5	"	199
" 5	"		12	"	419
" 12	"		20	"	31
Above 20	"		—	"	28
Age not specified	"		—	"	711
					3,912

In analyzing these and other tables, the commission have ascertained that hereditary influence is not powerful in the production of cretinism, as out of 8,000 families of cretins, not more than 300 parents were the subject of the malady.

In reference to the locality, the commission have established that deep, narrow, and tortuous valleys abound the most with cretins, and that the villages in which they reside are remarkable for the abundance of stagnant water. They have also made out that the water is highly charged with lime, and deficient in iodine and bromine.

The commission have determined that the eradication of cretinism is best effected by the following hygienic precautions: To drain the valleys; to cut down unnecessary trees, so as to allow a free circulation of air; to furnish a purer water; to insist upon houses being built on sanitary principles. To encourage a meat diet, and the liberal use of salt; to prevent, as far as possible, the marriages of cretins, scrofulous and rickety persons.—*Provincial Med. and Surg. Journ.*, Jan. 22.

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30. *Causes and Cure of Goitre.*—The number of persons affected with goitre in France amounts to about four hundred and fifty thousand; the number of cretins is little less than thirty-five thousand to forty thousand. As there can be no reasonable doubt that both affections depend upon circumstances capable of being modified by hygiene, the French Government, following the laudable example of the Sardinian authorities, have appointed a commission to inquire

into the causes which may give rise to goitre, and into the best means of preventing or curing this unsightly disease. The following *resumé* of the opinions entertained by the commission may be useful to place on record, although it would seem that they have been rather exclusive in attributing the development of the malady to a single cause.

The first care of the commission was to construct a geographical map of goitre; to study the nature of the soils in which the disease is endemic; and to analyze the food, drink, &c., of such localities as compared with the aliments in neighbouring districts free from the complaint.

"It was soon ascertained that the existence of goitre bore no relation whatever to latitude, climate, elevation of residence, poverty, or other depressing causes; but the chemical examination of the fluids employed as drink lead to a remarkable conclusion. It is this: 'that goitre depends on the presence of magnesia in the food or drink, joined with the absence of a sufficient quantity of iodine to serve as an antidote.' These two conditions are essential for the development of the disease.

A mere inspection of the maps of localities affected with goitre, and of geological maps, suffices to prove that the disease prevails endemically in magnesian formations. This fact is admitted by the most distinguished geologists —M. Elie de Beaumont, in France; M. Studer, in Switzerland; M. de Sismonda, in Piedmont. In every locality in which goitre prevailed as an endemic disease, the commission found a notable quantity of magnesia in the substances used for food or drink. In certain localities infested by the disease, although the formation is not magnesian, a large proportion of magnesia was found in the water drawn from the wells, as at Neris and Landisay.

This general fact is further corroborated by others of a particular kind. In the goitre countries it is a common habit for young men, who desire to escape serving in the army, to drink several pints of a certain kind of water daily; they soon become attacked by the disease and escape the conscription. Now, these waters are strongly charged with magnesia. On the other hand, families, which take care to drink no other fluid than rain water, invariably escape; and it is well known that the water derived from the icebergs never gives goitre.

This latter fact has been applied in practice with the best effects. Many localities have been completely relieved from the disease by substituting the use of rain water for well-water. In the town of Montmeillan, for example, goitre has almost completely disappeared since the inhabitants have been induced to drink nothing but rain water.

A second important point established by the French Commission is, that a small portion of iodine, if taken daily with the food, acts as a preservative against goitre. Common sea-salt always contains a certain proportion of iodine, but not enough. From ten to fifty parts per thousand are required, and the commission are of opinion that, if this proportion of ioduret of potassium were mixed with the salt used for food in goitre localities, the development of the disease would be completely prevented. Of course, if the people could be prevailed on to drink nothing but rain water, the chief cause of the disease being removed, success would be much more certain. It is calculated that the general use of this iodurettted salt, in the goitre countries, would not entail an annual expense of 320*l*.

Dr. Grange, indeed, has employed this simple method with the best effects during the last eighteen months. Goitre has been banished from every family which consented to employ the iodurettted salt in a persevering manner. At the expiration of a few months, not a single individual remained affected, although every member of the family, from five years of age, had been previously afflicted with the disease. This is a most encouraging result, and a great triumph for medicine."—*Med. Times*, Nov. 16, 1850.

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31. *Chloroform in Lead-Colic.*—Dr. Aran has published, in the *Bulletin de Thérapeutique*, for Oct. 15th, 1850, the results of his experience in the use of chloroform as a remedy in lead-colic. The following are his conclusions:—

There can be no doubt as to the possibility of very soon curing lead-colic, by the internal and external use of chloroform. The advantages of this treat-

ment are striking. Lead-colic is eminently a painful affection; chloroform removes the pain. The disease is probably dependent on intestinal spasms, which tend to produce the characteristic obstinate constipation; chloroform calms the spasms. It does not, indeed, cause the lead to be evacuated from the system; but, by the employment of sulphur and alkaline baths, the skin is freed from the metal; and the same effect is produced on the intestines by enemata. No inconvenience is likely to arise when the evacuations are re-established slowly and with difficulty, from the use, for some days, of castor oil or some other mild purgative. Drastic purgatives frequently increase the colic, and even produce vomiting, when given before the pains are calmed and the evacuations re-established. Chloroform, applied principally externally, immediately calms the pains, and facilitates the use of purgatives, if it be found necessary to employ them.

The mode of external application, adopted by Dr. Aran, is to pour from one to two drachms of chloroform on a wet cloth, and keep it applied to the abdomen for a quarter or half an hour. He also gives it in mixture; and in enemata, preceded by a common injection. It is on the local application, however, that he seems to place most reliance. The enemata have sometimes appeared to increase the pain.

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32. *On the Treatment of Itch.* By MM. Bazin and Bourguignon.—M. Bazin, physician to the St. Louis, in a recent report, furnishes an account of the trials he has made of the various means of treating the itch, and of the definitive results he has arrived at. He states that, at the time of his appointment in 1847, the medium time occupied in treating the disease by the *sulphuro-alkaline ointment* applied to the wrists and insteps, together with sulphureous baths and fumigations, was fourteen days; but that since he has caused the *entire body* to be well rubbed with it (rubbing with extra force those parts the acari specially infest), the patients are dismissed cured in two or three days. Some practitioners who have adopted the plan have erred in its application by leaving some portions of the body unrubbed, or by continuing the friction as long as any itching was perceived. In the first case the disease reappears; while in the other, by prolonging the frictions beyond the time necessary to destroy the acari, and the vitality of their ova, other eruptions are induced which give rise to great itching. This itching and eruption, occurring after the employment of two complete frictions, furnish an indication to desist instead of to continue; and if they do not then disappear, they may be relieved by tepid baths.

There are cases, however, in which, from the existence of great abundance of pustules, the sulphuro-alkaline ointment would excite too much pain, or in which the patients have such an invincible repugnance to its smell, that we should resort to some other substance; and M. Basin finds, by numerous trials, that the *lard* and *oil*, which form the base of all antipsoric preparations, if employed in general frictions, either together or separate, will effect a cure, only from four to six, instead of two, frictions being required. Another ointment recently tried, containing *chamomile*, cures in three frictions, soothes the itching instantly, and does not give rise to any secondary eruption. It is composed of equal parts of fresh chamomile, olive oil, and lard.

M. Bourguignon, in his recent prize essay, prefers the *staphisagria* to any other remedy. He adds 300 parts to 500 of lard, stirring the powder into the boiling lard, and keeping up a temperature of 100° C. for twenty-four hours. After straining, a little essence may be added. Baths should be taken before and during the treatment, and the frictions should be made four times a day, the cure being completed by the fourth day.—*British and Foreign Med.-Chirurg. Rev.*, Jan. 1851, from *L'Union Médicale*, 1850, Nos. 82, 135. *Journal de Chimie Méd.*, No. xi. p. 671.

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33. *Disease of the Heart and Chorea.*—M. Trousseau frequently points out to his class the correlation so often observed between disease of the heart and chorea; so that examination of this organ, and inquiry into the history of the case as regards rheumatism, should never be neglected. Such correlation supports the views of those who regard the disease as rheumatic or rheumatoid;

and indeed if this were not its nature, how can we explain that a disease which induces such marked disturbance of different parts of the nervous system, even to the intellect itself, should be so completely curable?—*British and Foreign Medico-Chirurgical Review*, January, 1851, from *Gaz. des Hôp.* No. 86.

34. *Sulphate of Zinc in Chorea.*—Whilst visiting the medical wards of Guy's Hospital, we have often noticed the success with which sulphate of zinc is administered in cases of chorea; and although we are aware that the profession have been made acquainted with the power of zinc in chorea by the able paper of Dr. HUGHES, in the *Guy's Hospital Reports* for 1846, we put the following cases upon record, that the continued good results of this mode of treatment might be extensively known. Before entering into details, we shall just quote from Dr. Hughes's digest a few facts connected with the use of zinc in the convulsive disease under consideration.

"*Zinc.*—This metal has been more largely administered than any other. In all cases, with the exception of two, which were successfully treated by the oxide, the sulphate has been in the form in which it was prescribed. The dose has been increased up to thirty-six grains three times a day. It has not often caused sickness. The stomachs of some persons, however, appear unable to bear it, even in small doses; and in others the organ rebels against the increase after a certain number of grains has been attained. Zinc was prescribed in sixty-three cases. Of these it effected a cure in forty-five, or seventy-one per cent.; it relieved in two; it failed to effect a cure in sixteen, or twenty-five per cent. In seven of the forty-five cases iron had previously failed; the zinc was given together with iron in one, and with the administration of electricity in five cases."

It will thus be seen how trustworthy a remedy is the sulphate of zinc in this disease; still, as chorea, independent of its connection with rheumatism, often arises from imperfect nutrition, it might be the case that the improved diet, rest, and comforts which the patients experience in the hospital, had some share in the amendment. We should not omit to state that we heard Dr. Golding Bird maintain in the wards, a few days ago, that zinc has a peculiar and specific influence on the nervous matter, in about the same manner as iron on blood.

The first case, the notes of which were taken by Mr. H. B. Wood, refers to a little boy eight years of age, very weakly and strumous-looking, who was admitted into Job Ward Oct. 11, 1850. He had had frequent attacks of croup, and never enjoyed robust health. About three weeks ago, whilst going to school, he was frightened by a bullock, and a few days afterwards he began to exhibit strange contortions of the body, which went on increasing in frequency and intensity up to his admission. The poor little patient was in fact constantly in motion, except when asleep. When examined, he was found very thin; skin hot and dry, and pupil dilated. The intellect was quite clear; the tongue red and injected, and protruded in a quick, sharp manner, but withdrawn quietly. The articulation was considerably affected. Pulse 76, sharp, very irregular in rhythm, with systolic murmur under the nipple. Respiration very irregular in frequency; bowels open; and appetite inclined to be voracious. The involuntary muscular twitches of all the extremities are constant.

Purgative doses of mercury with soda were administered, and a few days afterwards the patient had sulphate of zinc, galbanum pill, and extract of hyoscyamus, of each two grains, in the form of pill, one to be taken morning and midday. The sulphate was increased by half grains every other day, and on the sixth after admission the systolic murmur had decreased, and the movements were less convulsive. Wine was ordered on the fourteenth day, and on the seventeenth the patient was reported as improved in every respect; the heart's action was more regular, and the muscular contraction of the limbs hardly noticeable, except the patient became excited. On November the 3d, the twenty-second day after admission, the little boy was beginning to feed himself; the hands were getting steady, and the respiratory movements, as well as the action of the heart, more regular. On the thirty-ninth day he could almost command the use of his limbs, taking, at the time, eleven grains of the

sulphate per diem; and he was discharged December the 9th, about two months after admission, walking without any involuntary muscular contraction, and in good general health.

The notes of the second case were taken by Mr. Oddling. The patient is a little boy six years and a half old, who was admitted into Job Ward November 19, under the care of Dr. Addison. He is a child of fair, florid complexion, and light brown hair; has always enjoyed good health up to a month ago, when, having been sent to a shop with money which he lost on his way, he returned home very much frightened, and on the next day strange movements were first observed. We may mention in this place that fright has certainly a large share in the causes which produce chorea; and if we turn to Dr. Hughes's excellent paper, we find the following passage on the subject: "*Fright.*—It appears to be generally acknowledged in the profession, and it is very commonly assumed by parents, that fright is a very frequent exciting cause of chorea. As far as the table may be trusted—and as regards the particulars enumerated I believe it may entirely be trusted—this very common opinion appears to be correctly founded." The patient had never had rheumatism. We are aware that this is not the place for entering upon the consideration of the connection which has been traced between chorea, rheumatism, and heart-disease; but we shall just quote, from the *Guy's Hospital Reports* of 1846, Dr. Hughes's opinion on the subject. "*Rheumatism.*—Next to fright, rheumatism may be regarded among the most common causes of chorea. The connection between the two diseases has been often noticed, and the frequent concurrence of spasmodic affections with pericarditis, which, in the great majority of cases, is of rheumatic origin, has been particularly illustrated by Dr. Bright, and more recently by Dr. George Burrows. It appears at least doubtful whether, in most of such cases, there exists anything more than a sympathetic affection of the spinal marrow, seeing that after the removal of the rheumatic affection the chorea is usually curable by the same remedies which are found available in cases of chorea having a different origin." Dr. Hughes states that from his table rheumatism was the cause of chorea in the proportion of fourteen per cent.

On admission it was found that the head and all the limbs were constantly being tossed in every direction; there was difficult articulation, but the convulsive movements were pretty similar in amount on either side of the body. The mind was clear; the boy never had a fit; the respiration was normal; the tongue clean; the appetite good; bowels costive; and the urine normal. The first sound of the heart was accompanied by an abnormal bruit, but the rhythm otherwise regular, and the skin moist and supple.

Dr. Addison ordered a purgative dose of scammony and mercury, and soon afterwards one grain of sulphate of zinc, to be taken three times a day. On the third day the dose was increased to one grain and a half, and on the tenth day the convulsive movements had considerably diminished, the abnormal condition of the heart was disappearing, the general health being very good. The dose was now increased to two grains and a half three times a day. On the twentieth day the movements were but very slight, and the cardiac bruit had materially decreased; the patient now took four grains at the same periods. On the twenty-fourth day five grains were ordered; and on the twenty-sixth day after admission the boy was discharged without a vestige of choreic movements, though there was still a slight murmur accompanying the systole of the heart.

We lately noticed, in Job Ward, a third case, which has so remarkably improved, that we annex a short sketch of it from Mr. Wood's notes, though the little patient is not yet quite well. This boy is fifteen years of age, and was admitted under the care of Dr. Barlow, December 18th, 1850. He is the son of a stonemason; has been subject to ulcers on the extremities and pains in the head, but never had a fright, fall, blow, or rheumatism. For the last six months he has been engaged as waiter, with a great deal of work up and down stairs, never going to bed before twelve o'clock. He was at last obliged to leave his situation, with pains in the back and head, and difficulty of walking. His manner was at the same time altered; he would, without any apparent

cause, burst out crying or laughing, and make contortions in the face, which, with twitchings of the limbs, became worse and worse, the articulation growing indistinct at the same time.

On admission he was found to be a strumous boy, of light complexion, and vacant expression of countenance, the whole frame being affected with convulsive movements, which every second caused the whole frame to be tossed in different directions. The tongue was protruded with difficulty, and it was almost impossible to understand what the patient wished to say. The right side of the body is worse than the left, and when the boy is spoken to or looked at the paroxysms are frightful. Appetite voracious; slight pain in the head; skin hot, but pliable; pulse frequent and irregular; tongue injected round the edges, but creamy in the centre. The patient sleeps badly, but the action of the heart and lungs is healthy. After a smart purgative, Dr. Barlow ordered half a grain of sulphate of zinc to be taken three times a day. On the third day this was increased to one grain; on the eighth to two grains, and thus the doses were increased by one grain every other day. The boy is now taking five grains three times a day, and is almost well. As he was accustomed to take much malt liquor, Dr. Barlow allowed him a pint of porter per diem.—*Lancet*, Jan. 11, 1851.

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35. *On the Treatment of Obesity.* By T. K. Chambers, M.D.—That form of disease which commences at birth, and goes on increasing during infancy and childhood, is, I believe, so invariably fatal before the age of puberty, that I do not think we have reason for hoping that it is in any way amenable to medicine. At all events, I have not been able to discover any one whose experience has led him to pronounce it curable. It is a form of monstrosity; and as the subjects of it commonly display some other bodily malformation, and a deficiency of intellect, their death is a relief from a miserable prospect.

When it begins in childhood, or about the time of puberty, we must not be deterred by the circumstance of its being hereditary from attempting to remedy the inconveniences arising from it. We cannot truly reduce our patients entirely to the average size and weight, but we may enable them to pass life in comfort and usefulness.

The later the disease commences, the more controllable it is by management, until the middle period of life is passed, and then old age impedes in some degree the benefit which we may confer, not by rendering our measures inert, but by preventing our employing them quite so actively as we should have done earlier.

The first thing indicated in all cases is to cut off, as far as possible, the supply of material. Fat, oil, butter, should be rigorously interdicted in the diet table. But all eatables contain some portion of oleaginous matter, and especially those most convenient to advise the use of for a lengthened period. And almost all are capable of a transformation into fat, when a small quantity of this substance is previously present. It is desirable, therefore, that the mass of food should lie in the stomach as short a time as possible, in order that at least a fatty fermentation may not be set up in it. Very light meals should be taken at times most favourable to rapid digestion, and should consist of substances easy of solution and assimilation. To this end, the time of the meals should be fixed for an early hour in the day, before exertion has rendered the powers of the entrails languid and weak. Breakfast should consist of dry toast, or what is still better, sea-biscuit; and if much active exercise is intended, a small piece of lean meat. Dinner at one, on meat with the fat cut off, stale bread or biscuit, and some plain-boiled maccaroni, or biscuit-pudding, by way of second course.

Liquids should be taken, not at the meal, but half an hour after, so as not to impede the action of the gastric juice upon the mass. Here should end the solid feeding for the day; no second dinner or supper should follow, nor, indeed, any more meals be taken sitting down. A piece of biscuit and a glass of water can be taken standing up, if faintness is experienced; a cup of gruel or roast apple before going to bed.

This is not a scale of diet by any means unattainable. A butcher and re-

tired pugilist has adopted it for some years with the greatest comfort to himself. He is able, upon it, to work in the most violent manner in a small garden which he cultivates for himself in the suburbs. He has reduced himself from 20 to 17 stone; whereas his brother, who has not the same strength of mind, has increased to 23 stone in weight. Persons of more refined education ought, and often do, practice the same self-imposed restraint more easily. J. R. has reduced himself from 22 to 18 stone, and sometimes brings himself down to 17, but finds that he derives no particular advantage from being of the lower weight.

The smallest amount of nutriment consistent with the health of the individual can be found by experiment only; but we need not fear that ten ounces of solid food a day is too little, for the last-mentioned gentleman confined himself for a long period to that quantity, and found his mental and bodily powers always equal to the strain which the pursuit of a laborious profession in London demands. It may be remarked, by the way, that it is often advisable to add a small allowance of malt liquor at dinner, as otherwise the craving of the appetite is less easily appeased. The beers to be avoided are of course the thick, sweet kinds, but that which is thoroughly fermented, at a low temperature, in the Bavarian way, seems to contain very little injurious matter.

I do not know that any advice concerning sleep is peculiarly applicable to obese persons, beyond what we should recommend to all classes of men. A draught of morning dew, "nocturni roris auram ante solis ortum bibendam," which Aurelian prescribes for the corpulent, is equally beneficial to every one. They are usually uneasy sleepers, and though lethargic, by no means averse to early rising.

In cases where the fat is largely accumulated in the omentum, it is very convenient for the patient to wear a band round the abdomen, which may be tightened gradually. The support thus given to the abdominal muscles relieves the dragging sensation in the loins, which many persons, whose viscera are heavy in proportion to their strength, experience. It enables exercise to be taken with more facility, and appears also, by pressure, to afford some assistance to the absorption of fat.

The above remarks will apply equally to all forms of obesity; the abstinence recommended can be borne even by the aged, and only comfort be experienced.

As respects exercise, however, a distinction requires to be made. The young and vigorous, whose obesity does not prevent the use of their legs, cannot employ them more usefully than in walking as long as they are able. The greater number of hours per day that can be devoted to this exercise, the quicker will be the diminution of bulk. But as riding, by the gentle shaking of the abdomen, excites the secretions of the digestive organs more, it should, where practicable, be employed in addition. Where freedom of motion has once been gained, rowing, shooting, any or all of the forms of British gymnastics, should be adopted as regular habits.

But in the asthenic form of the disease, especially in elderly people, this is scarcely practicable. The defect in muscular power prevents the use of the limbs in walking for a long time enough to be advantageous. But where riding can be managed, it should on no account be omitted, and the suspensory belt before mentioned is often a valuable auxiliary to the employment of this exercise.

The ancients were much more in the habit than we are of using various forms of friction to the skin in treating chronic complaints; and we find in Aurelian a recommendation to the corpulent to employ dry rubbing, either with cloths alone, or with the addition of various powders. Modern habits of cleanliness supersede, in some degree, these remedies. But the skin is not unfrequently greasy from a thick sebaceous secretion, and the circulation through it languid in asthenic obesity, and in these cases horsehair gloves may be used with great advantage. Dr. Flemyng strongly advises friction to be employed to the trunk of the body as promoting absorption and invigorating the surface. The Greek additions of cold bathing or sponging, especially with sea water, the vapour or hot air bath, followed by rubbing with salt or with sand, and many other modifications of the same principle enumerated by Aurelian, will naturally suggest

themselves to every intelligent patient. The same author very sensibly advises these remedial measures to be employed fasting, and no food to be taken for some time afterwards, and modern habits render before breakfast a convenient time. To these rules of management, medicines, strictly so called, must be viewed as secondary and auxiliary. Unless these laws are obeyed, pharmacopœias are useless.

Purgatives I have generally found not needed in the plethoric form; the bowels usually act once or twice in the day. But in the asthenic obesity *of old people*, where the abdominal walls are weakened by long pressure of an unnatural weight, it is necessary to employ them.

But there is one class of medicines so universally applicable to *all* cases of obesity, that I think a trial of them should never be omitted. The chemical affinity of alkalies for fat point them out as appropriate alteratives in this complaint, and experience proves that they are suitable to the state of the digestive organs. The most eligible one is liquor potassæ, and it may be administered in much larger quantities than any other. If given in milk and water, we may safely commence with half a drachm and raise the dose to a drachm and a drachm and a half three times a day. The milk covers the taste of the potash better than any other vehicle. It has truly the advantage of saponifying a portion of the remedy, but there is no evidence to prove that its efficacy is thereby endangered; indeed soap itself has been strongly recommended. A physician, whose case is recorded by Dr. Flemyng, reduced himself, by Alicant soap alone, two stones in weight.

I have often given the above-mentioned doses of liquor potassæ (even to children in cases of scrofula and consumption) without any harm arising from its use, when taken, as desired, in milk. The fear of alkaline medicines has probably arisen from the injury observed by Huxham to follow the use of Mrs. Stephen's saponaceous mixture, at one time so popular, and therefore often misapplied. The injury appears to have originated from their having been employed in improper cases, such as debilitated gouty subjects, chronic stone in the bladder, and the like, to which, of course, much harm would be done.

A poor woman, who sold eggs in Chelsea, was becoming quite unable to gain her livelihood by her ordinary occupation. I have not kept a note of her weight and height, and therefore she is not mentioned in the table of cases, but she was extremely obese, and the cause of a variety of symptoms she complained of seemed traceable entirely to the accumulation of fat. By taking liquor potassæ only, without change of diet, she was reduced so far as to carry on her trade with comfort.

Another case was communicated to me the other day, of a gentleman who weighed 19 stone 7 lbs. By regimen, exercise, and liquor potassæ, he was reduced two stone and a half in six weeks.

I have mentioned bleeding, and perhaps that may cause some surprise, after the observations which have been made on the state of the circulation in fat people. But where distinct signs of plethora are present—such as pain over the eyebrows, beating of the temples, restless sleep by night, lethargy by day, with full lips and an elastic skin—it is capable of being employed with safety; and where it is employed, the advantage derived at the commencement of a course of treatment is very great, for it gives all the other remedies a fair start; and by affording immediate relief to many symptoms, gives the patient a favourable opinion of the plan he has undertaken.

On the other hand, it is scarcely necessary to say that much risk attends the loss of blood; for if the heart has become atrophied and weak, it will not stand the shock. Venesection may cause either sudden death, from failure of the heart's action, or effusion of blood in the brain, from disturbance to the circulation.

Bitter tonics are often of great advantage in enabling the stomach to digest more easily and rapidly, and therefore to be contented with a smaller quantity of really nourishing food. The increase of appetite which they cause does no harm; for when patients are getting better, they are usually more obedient to their medical man, and can be taught to control it. Gratitude for the benefit they have received makes them glad to follow advice, however hard.

Some medicines must now be mentioned, which have been recommended for the cure of obesity, but which analogy and experience do not approve.

Vinegar has been employed by those who are foolish enough to practice upon themselves; but as it produces thinness only by injuring the digestive organs the benefit is not worth the price paid for it, and no medical man would ever advise the use of such a remedy.

Iodine has been spoken of as likely to do good, from the power it exhibits of stimulating the absorbents in cases of scrofula and tumours. But its moderate use certainly does not cause the disappearance of healthy fat. Indeed it has been noticed by Lugol, and is matter of daily observation at our metropolitan hospitals, that patients frequently acquire a considerable degree of embonpoint during the time they are taking iodine. The cases of tumours and of fat are very distinct. As Dr. Pereira remarks, "The enlargements which these agents (mercury and iodine) remove, are not mere hypertrophies; their structure is morbid, and they must in consequence have been induced by a change in the quality of the vital activity; in other words, by morbid action. Medicines, therefore, which remove these abnormal conditions, can only do so by restoring healthy action." But the action which causes the deposition of fat in the adipose tissue is, though excessive, of a healthy nature, and harm, rather than benefit, is to be expected from the medicine under discussion; that harm which always accrues from a valuable remedy wrongly employed.—*Lancet*, 1849.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

36. *Case illustrating the Difficulties of Diagnosis of Morbid Growths from the Upper Jaw.* By Prescott Hewett, Assistant-Surgeon St. George's Hospital. (*Proceedings of Royal Medical and Chirurgical Society*, Dec. 10, 1850.) [The following case is not only interesting as illustrating the difficulties of diagnosis in morbid growths from the upper jaw, but also from the discussion to which its reading gave rise, having elicited the opinions of some of the most eminent men in the profession, relative to the use of anæsthetics, the patient having died on the table, and his death having been caused, there is reason to believe, by the chloroform administered. Though long, we republish the report entire as given in the *Lancet* (Dec. 28), and bespeak for it an attentive perusal.]

The patient, a man aged twenty-five, was admitted into St. George's Hospital, under the care of Mr. P. Hewett, in May, 1848, with a large tumour, of an irregular shape, occupying various regions of the left side of the face. Presenting every appearance of having originated in the antrum, this tumour was found in the front and back part of the cheek, in the temporal fossa, in the orbit, and in the nostril, extending to the back part of the pharynx; round in shape, but lobulated; it was firm and elastic to the touch, perfectly movable, and, in the nostril, of a dead white colour and glistening appearance. The skin, conjunctiva, and mucous membrane of the nose were quite healthy, and no enlarged glands could be detected in any part. The history of the case was, that six years previous to his admission into the hospital, the patient was troubled with a disease, supposed to be a polypus of the nose, which had been easily removed with the forceps; subsequently, however, the cheek began to swell; and the tumours gradually made their appearance in the regions in which they were found; all this had occurred without pain, and with very little inconvenience. A year ago caustic had been extensively applied in two different places, large cicatrices making the spots. This treatment had produced no effect on the disease, and no fungating growths followed the application. At different times, there had been extensive bleedings from the nose, which had somewhat reduced the patient. At a consultation of the surgeons of the hospital, it having been resolved that, in all probability, the disease was of the fibrous kind, and connected with the antrum, the removal of the upper jaw was decided upon, Dr. Snow, to whom the surgeons of St. George's are so much indebted for the able manner in which he for a long

time administered chloroform at the hospital, having kindly undertaken to give it on this occasion. The patient being seated in a chair, the operation was performed in the usual manner; but, on removing the superior maxillary and malar bones, it was discovered that the disease was not connected with the upper jaw—it was altogether behind it The larger portion of the tumour was dissected from off the pterygoid process, to which it was firmly attached. Those portions which were in the orbit and temporal fossa were removed without difficulty, being for the greater part simply connected with some very loose cellular tissue. The patient, having become faint, was placed in the horizontal posture, and a small quantity of stimulant administered, after which he soon rallied. The portion of diseased structure in the back of the nostril was then removed with a strong pair of curved scissors. The pulse having again failed, the patient was at once laid on a bed and carried into an adjoining room; different restorative means were made use of, and he appeared to rally somewhat; but shortly afterwards, as the breathing became embarrassed, an opening was at once made into the crico-thyroid membrane, and, as a last resource, an attempt was made to carry on artificial respiration with a tube; but every effort proved of no avail—the patient soon died. But few vessels were met with during the operation, and no great amount of blood was lost. Little or no bleeding followed the incision in the neck. The details concerning the administration of the chloroform are given in the following letter from Dr. Snow. A careful examination of the bones removed during the operation showed that, in the superior maxillary, the antrum was all but obliterated, the posterior wall of the sinus having been forced, by the tumour lying behind it, against the anterior one; there was merely a chink left, the cavity of which was quite free, and lined by healthy mucous membrane. The malar was much more curved than natural. The structure of both bones was perfectly healthy. The tumours were of a purely fibrous character. At the dissection of the body, it was made out that the tumour had originated in the roof of the left nostril, its main point of attachment having been to the under part of the body of the sphenoid and inner surface of the pterygoid process. Portions of diseased structure were still found in the sphenoidal sinuses, as well as at the upper and back part of the septum nasi. Some loose bits were also found deep in the temporal fossa, and at the back of the orbit. These were lying in the cellular tissue. They were all connected to each other by slender pedicles, one of which passed through a hole in the perpendicular portion of the palate bone; that in the orbit had reached this situation by creeping through the spheno-maxillary fissure. The bones were throughout healthy in structure. The tissue of the growth was purely fibrous. The trachea and bronchial tubes, even to their minute ramifications, contained a quantity of frothy blood. The structure of the lungs was crepitant throughout, but each section presented numerous small, dark spots of ecchymosis, produced by some of the air-cells having been also filled with blood; these organs were otherwise free from disease. The heart was healthy; its cavities contained small black clots, but the greater part of the blood was thin and fluid, and did not congulate on exposure to air. The other viscera were quite healthy. In his remarks, Mr. Prescott Hewett principally drew the attention of the Society to the great difficulties which at times were found to exist as to a correct diagnosis of the precise region in which a tumour of the upper jaw had originated. Of these difficulties, the present case afforded a good illustration. The history of the patient, and the various regions in which the tumour existed, had led to the conclusion that the disease, having sprung from the antrum, had gradually burst through some of the walls of this cavity, and thence spread to the spots where it was found. The operation and the subsequent dissection proved, however, that the antrum had not been the starting-point of the disease. Mr. Prescott Hewett had little or no doubt that the morbid growth had first begun in the nostril, and had subsequently reached the pterygo-maxillary fossa, either by making its way through the spheno-palatine foramen, or by breaking down a portion of the palate-bone; once in the fossa, the progress of the tumour may easily be traced; it passed into the orbit through the spheno-maxillary fissure, and, in the face, it had in some parts made the bones yield, and in others it had so completely moulded itself to their

shape, creeping over their cutaneous surfaces, that the outlines of the bones were scarcely discernible. Mr. P. Hewett's remarks were altogether confined to tumours of a fibrous character. The morbid appearances observed about the lungs led Mr. P. Hewett to ask the question whether the administration of chloroform was advisable in operations about the mouth, where there was likely to be a certain amount of bleeding. He had no doubt that the blood found in the lungs had got there by passing through the glottis, and he doubted very much if such would have been the case had no chloroform been used. Many surgeons, fearing this accident, had of late not failed to condemn altogether the use of chloroform in these cases; but some, being unwilling to submit their patients to such serious operations without it, had adopted a middle course, administering this agent in the first steps of the operation only, hoping thus to avoid all risk. It remained still to be proved, however, whether, even with this precaution, there might not be danger in using anæsthetics in some operations about the mouth.

Mr. Fergusson said that the case was interesting in a variety of respects. It served to illustrate the difficulty of diagnosis in cases of this description. It was evident that the greatest care had been bestowed in investigating the nature of the case; every consideration had been given to it—as, indeed, no one could doubt on looking to the characters of the surgeons who had given their opinions about it; nevertheless, the disease proved to be somewhat different from what had been expected. It was supposed to have been a disease of the superior maxillary bone, but so far as he (Mr. Fergusson) could make out, it was only connected with that bone by lying in apposition with it. From the description given of the tumour, he should have supposed it to be a tumour of the antrum; and, indeed, had it not been for the very accurate description given by Mr. Hewett, of the compressed and altered condition of this cavity which was observed lying in front of the tumour, he would have concluded that it must have originated in this part. In a practical point of view, there was one feature deserving of special notice. In the description that had been given of the case, he (Mr. Fergusson) had not noticed any allusion to the shape or form of the front part of the superior maxilla. All that was said was that it seemed to be perfectly normal; that there was not any distortion of the alveolar ridge, the teeth, or the nostril. This would have led him to think the tumour deep-seated, as in most cases of tumour in the antrum it expands as much in front as at the back part. When there is not any alteration in shape or distension, in the front part of the superior maxillary bone, especially the alveolar stage, the greatest caution should be used in deciding on an operation, because the tumour, in all probability, would be deep-seated, as in the present instance. He confessed that, in the absence of the particular changes in the alveolar process, to which he had referred, and from the circumstance that the tumour had extended towards the orbit, and upwards and outwards, so as to involve the zygomatic ridge and fossa, he (Mr. Fergusson) should have felt some hesitation in resorting to an operation. What had occurred here served, perhaps, to show more conspicuously the difficulties connected with such cases. There were many other points, with reference to the pathology of this disease, which he would not then allude to, as they had been already, on former occasions, discussed in that room. With respect to the influence of chloroform, he (Mr. Fergusson) had operated very frequently since its introduction, in cases of this description, and some of these operations were very protracted; yet chloroform or ether had been used in these cases, and its application repeated when its anæsthetic effect seemed to be wearing off; and he had never met with any bad results, or anything which would lead him to believe that it might prove injurious. When chloroform was first introduced, he formed the opinion that it ought not to be used in these cases, because the blood trickling down the throat might perchance enter the larynx, and perhaps produce irremediable mischief. He had himself refused to operate in one case wherein it was proposed to give ether, but experience had since taught him that in these there was but little reason to dread mischief from that cause. He even had had cases in which the blood had trickled into the larynx, and yet no harm had resulted. He would wish to ask Mr. Hewett how long the operation had lasted, for a pro-

tracted operation of this kind might exhaust even a strong man. In such a case as this, all the circumstances should be carefully weighed, before the fatal result be attributed either to the operation or to chloroform.

Mr. Hewett, in reply, said that the first part of the operation lasted for eight or ten minutes, the bones being easily separated. Taking the period of fainting, and the conclusion of the operation, the proceedings from the commencement did not exceed twenty minutes.

Dr. Webster inquired whether the blood of the patient was fluid and black-coloured after death; or, if bubbles of air were found in the cavities of the heart or veins, as in cases where chloroform was employed in surgical operations, and which terminated fatally, these appearances were almost invariable? An answer to these would assist in forming a correct opinion whether or not the patient's death was in consequence of the chloroform employed to produce insensibility.

Mr. Hewett said that the blood was dark-coloured, and fluid. No air was observed in the heart. He believed that if the patient had died from the chloroform, it was by suffocation, and not as chloroform acting specifically as a poison on the mass of the blood.

Dr. Snow said that he could not agree with Mr. Hewett that the chloroform had any share in causing the blood to enter the windpipe of this patient. In the first place, there was no difficulty of breathing during the operation, nor for some time afterwards. It only came on just before death, which took place after the influence of the chloroform had altogether subsided. In the next place, he had administered chloroform in several other operations for the removal of tumours, both of the upper and lower jaw, and there had been no symptoms, in any instance, of blood having entered the lungs. He exhibited chloroform, almost every week, in operations about the mouth and nostrils, in which there was a good deal of bleeding—such as the operations for epulis, for nasal polypi, and for hare-lip, and cases in which a number of teeth were removed at once, and yet in no instance had blood got into the lungs. The operation for hare-lip, when the infant was laid on its back, with its head in the lap of the operator, perhaps put the glottis to as severe a test as any operation. He had administered chloroform, in nearly twenty cases, with the child in this position, since Mr. Hewett's case occurred; and he had also seen the operation performed in this way several times, in King's College Hospital, without the chloroform. There was a good deal of spluttering, whether this agent were employed or not, but in neither case did any symptoms of blood having entered the lungs ever supervene. He had performed some experiments in relation to this subject. In one of these, a kitten having been made so insensible that it did not flinch on being cut, was immersed over head in tepid water, coloured with logwood, and allowed to remain half a minute. During this time it moved its ribs in the attempt to breathe, but did not draw in any water, for it recovered readily from the chloroform after being withdrawn; and being then killed, its trachea contained no froth, and was not stained by the logwood. Flourens had pointed out, on the introduction of the inhalation of ether, that the functions of the nervous centres were abolished under its influence, in the same order as in asphyxia; and this was equally true of chloroform. But it was not found in asphyxia, by submersion, that a person began to fill his lungs with water as soon as he became unconscious; on the contrary, but little water was drawn in even during the last gasps which took place as he was dying. Indeed, as the glottis was an organ of respiration, it was to be expected that it would retain some amount of sensibility as long as breathing continued. As the blood, in Mr. Hewett's case, seemed not to have entered the windpipe by the wound made after death, in order to perform artificial respiration, it must have entered just before, when the patient was in a state of collapse, and moribund. There were spots of ecchymosis in the lungs, as he witnessed; but the quantity of blood was not enough to cause death so soon, although it might have produced ill effects, had the patient survived. With regard to the fluidity of the blood in the deaths caused by chloroform, he thought that it was probably due to the artificial respiration which had been employed, for he had not found the blood quite fluid in one animal out of a great number which he had killed with that agent.

Mr. Henry Charles Johnson had assisted Mr. Hewett in the operation under consideration. Now, it was suggested that the death might be accounted for in three ways, each distinct from, and unconnected with chloroform. First, the patient might have sunk from the length of the operation; secondly, he might have inhaled the blood during the existence of the syncope; and thirdly, the blood might have trickled through the wound in the trachea, and thus have produced suffocation. In answer to the first of these suggestions, he would reply that the operation was not longer than is usually the case in similar proceedings; the first steps were rapid, and the operation was only suspended during faintness: including the second part of the operation, the whole proceeding was not so long as is frequently the case in operations about the face. He thought this disposed of the first suggestion. With respect to the second suggestion, he was not aware of any case, where, in consequence of syncope during, and collapse after an operation, blood passing down the throat had found its way into the windpipe. Thirdly, the operation of opening the larynx was performed when the patient was expiring; the opening was made rapidly; there was scarcely any blood at all, and he believed none had escaped into the wound. Now, had chloroform any influence in producing the fatal result? For his own part, he had, since the occurrence of this case, abandoned chloroform in all operations about the face. Whether chloroform did or did not facilitate the admission of blood into the trachea, might admit of some difficulty of solution; but of this we were sure, that in the case before us, in which chloroform had been used, blood did get into the trachea and down the bronchial tubes, and death was the result.

Mr. Barlow was certainly quite under the impression that the man's life was destroyed by chloroform. It seemed far more reasonable, far more agreeable to the actual circumstances, to suppose that such had been the case than to conclude that death had been owing to the operation simply. It was gratifying to hear Mr. Fergusson state that he had removed the upper jaw so frequently, where chloroform had been given, without any bad result; this might happen, and yet some degree of risk have attended its administration. Six cases might do well, but the seventh might be followed by the issue of Mr. Hewett's. Looking to the effects of chloroform on the glottis and respiratory muscles, which could in no wise be moderated often, he doubted the propriety of chloroforming the patient in such an operation as that described; for a fatal case had happened in spite of the skilful administration of the anæsthetic agent, and an operation performed with as little delay as that case allowed of. There was no fault attaching to the giver of the chloroform; they were discussing quite another question. He thought the inquiries of physiologists deserving of some consideration in reference to the general operation of an extremely powerful agent. He had often experimented therewith, and he knew of nothing which so extraordinarily affected the muscular irritability; the high irritability of the batrachia was destroyed by it with a wonderful swiftness. In the case before them, blood appeared to have flowed through the glottis, because it was inirritable; the patient could not eject it, because coughing was impossible, so that he was endangered doubly. Mr. Barlow concluded by requesting his distinguished friend, Dr. Marshall Hall, to favour the Society with his valuable experience of the operation of this agent upon animals.

Dr. Marshall Hall observed, that he had listened with the deepest interest to the details which had been read to the Society, which he thought was under great obligations to the author for bringing forward so interesting a case, involving so important a question as that of the administration of chloroform; for it was this, in its largest sense, to which the communication gave rise. He (Dr. Hall) had performed a vast number of experiments on the effects of chloroform on the animal economy, and if he had been asked the question relative to its probable effect on the human subject before it had ever been administered to it, he should have said that its administration would be attended with the utmost danger. He believed that he might declare, that the effects of chloroform on the animal system, by inhalation or imbibition, are displayed, first on the cerebral, secondly on the spinal, and thirdly on the ganglionic systems, respectively, in relation to time. It required the utmost skill to *limit* its opera-

tion to the first of these; and if its influence extended to the second, there was danger, from the failure of respiration; and if to the third, there was sudden death, from the cessation of the circulation. The transition from one of these stages to the other was apt to be sudden, and unexpected dissolution was the terrible consequence. This event had taken place in the human subject; it had been then referred to unsuspected disease of the heart or lungs, but in this opinion he had no confidence; in experiment, the same unsuspected event has occurred. We remember the occurrence, in a lecture by Mr. Brande, at the Royal Institution. That gentleman having placed a guinea-pig under the influence of chloroform, it fell on its side. The lecturer is reported to have said, "The animal will speedily recover from this momentary debility;" but it never did recover! He (Dr. Hall) had seen the same unexpected death repeatedly. And yet it was said that many hundreds, nay, some thousands, of patients, had been placed under the influence of chloroform at St. Bartholomew's Hospital without a single fatal result. The hospitals of St. George and of St. Thomas had been less fortunate. Still it was marvellous how few accidents had occurred. This he ascribed entirely to the extreme caution and skill with which this dangerous agent had been administered, and much credit was due to those praiseworthy members of our profession who have devoted themselves specially to this responsible task. It was not in hospitals, however, but in private practice, that, from the want of equal experience, the danger of administering chloroform was greatest. It was accordingly in private practice that fearful events had most frequently taken place. In general, he believed the fatal result had occurred from the influence of the chloroform on the ganglionic system and the heart. In the case before the Society, it was obviously from affection of the spinal system and defective reflex or diastaltic closure of the larynx. This orifice became paralyzed in its excitability and in its contraction, and the blood present in the mouth was drawn into the larynx and bronchial tubes, inducing asphyxia. That the affection took place in the order he had mentioned was obvious from the simplest experiment. If a frog were inclosed in a tumbler inverted over a plate, and exposed to the vapour of five drops of chloroform, it soon ceased from voluntary, and then from respiratory movements; afterwards the circulation failed. He might also remark, that, tried in this manner, chloroform was a far more dire and active poison than even hydrocyanic acid. There was no question, he thought, that the vapour of chloroform was more dangerous than that of ether, and he had often wondered that it should have been preferred as an anæsthetic agent. Before he sat down, he begged leave to communicate a fact of some interest to the Society. The fellows would doubtless remember the case of amputation read to it some time ago, said to have been performed during a state of anæsthesia induced by mesmerism. It was argued by him, at the time, that the reported perfect immobility of the patient proved too much. Volition being removed, there ought to have been reflex movements. He understood that the man had since confessed that he acted the part of an impostor!

Dr. Copland remarked that one circumstance had not been, he thought, sufficiently noticed by the speakers: he alluded to the question, whether the shock of an operation was greater or not, and more or less dangerous, when chloroform was administered. He believed that the shock was greater, and the danger increased when chloroform was administered; he believed that the reaction which followed an operation when no chloroform was given was salutary and advantageous to the patient, and thought the shock was greater when you deadened sensibility in any way. In the case under discussion, it was not known whence the blood in the bronchi had originated. Now, when death occurred from chloroform, the lungs were congested, and the blood in a fluid state. Chloroform relaxed the small vessels, and hence we might explain the presence of the blood in the bronchi and air-cells, by supposing it to have been an exudation from the lining membrane, consequent upon the twofold cause of a relaxed condition of the capillaries, and an unusually fluid state of the blood.

Mr. Tracy said, in this case it appeared, from the statements of all who were present, that the man rallied from the syncope. Now he never heard of, or saw, a case in which such reaction took place, when chloroform destroyed the

patient. Was the death attributable to the influence of shock? In no case, he believed, did blood get into the lungs in operations about the teeth and face when chloroform was used.

Dr. ADDISON said that, in a fatal case which he saw, death was preceded by the cessation of hemorrhage from the part under the knife; the heart having become remarkably enfeebled, and having ceased to beat. On what grounds did Dr. Snow declare so confidently that the patient did not die of chloroform?

Dr. SNOW said that there was no room to suppose that the patient had died from the influence of the chloroform, for, at the beginning of the operation, when the insensibility was greater than at any subsequent period, the patient was only in what he termed the third degree of narcotism; and the fourth degree, in which there is relaxation of the muscles and stertorous breathing, could be induced with perfect safety, and was often seen in operations. Mr. Barlow had stated that there appeared no other cause for this patient's death than the chloroform; he (Dr. Snow) considered that there were sufficient causes. The operation itself was one which the surgeon considered dangerous under any circumstances, and thought it his duty to explain that danger to the patient. In this case it had to be undertaken in a subject blanched by previous loss of blood; and again, unusual difficulties were met with during the operation: the tumour could not be all removed, oozing of blood continued, and the wound could not be closed; consequently the operation might be considered, in some sense, as lasting to the time of death. There was also the shock arising from pain, which was altogether prevented, only in the early part of the operation, in this case. Of all the operations that he had seen, during the three years that he had constantly attended St. George's Hospital, this appeared the most formidable, and the patients having recovered from the immediate effects of all the other operations, under ether and chloroform, it seemed hard upon the latter agent that it should be blamed in this case.

Dr. WEBSTER apologized for repeating his question, respecting the morbid appearances noticed in the blood; as he considered them essential in deciding whether death was produced, in the case under discussion, by chloroform or otherwise. In most of the patients acknowledged to have died from the employment of that agent, air was met with in the heart or veins, whilst the blood was always fluid and black coloured. Undoubtedly, a person might sink from so severe an operation as the one performed by Mr. Hewett, and which was somewhat similar to a case under the care of the late Mr. Liston, where the patient never rallied from the shock, but died very soon afterwards, although chloroform had not been employed. This might also have occurred in the present instance; but he (Dr. Webster) thought, notwithstanding the arguments used, and the explanations made that evening, the death of the individual whose history has been now detailed to the Society, was chiefly owing to the anæsthetic agent employed, and not from the operation, however severe.

Mr. PRESCOTT HEWETT replied that no air was found in the heart, and the veins were not examined in reference to the point.

Mr. CHARLES HAWKINS said that conflicting opinions respecting such a case as this prevented younger surgeons from arriving at any conclusion respecting the employment of chloroform in this class of cases. He had seen Mr. Hewett perform this operation, and he never recollected to have seen a patient die so soon after an operation. Patients were rarely, indeed, carried away from the operating table merely to die. The case was more like one in which sudden death resulted from the escape of air into the veins. He would inquire, then, what really was the cause of death in this case? Mr. Fergusson did not attribute it to the chloroform, as he had performed the same kind of operation in six cases since this one, under that agent. He (Mr. Hawkins) had been surprised to hear Dr. Copland express his opinion that the shock of an operation was greater under chloroform than without it. He had always thought the contrary to be the case. If, however, Dr. Copland was right, his opinion offered another argument against the use of this agent. He had seen a patient die suddenly from the shock occasioned by the passage of a bougie.

Mr. CÆSAR HAWKINS said that it was natural for Dr. Snow to throw off the blame from the chloroform; but he (Mr. Hawkins) would remark, that there

could be no kind of reflection cast upon the operator; for all who had witnessed the careful and scientific manner in which Dr. Snow administered this agent would be sure that every precaution as to safety would be taken. Now, he believed that the death resulted from the presence of the blood in the larynx, and that this blood would never have found its way into that passage unless chloroform had been administered. It was a very rare accident, and offered no sufficient reason why we were to abandon the use of chloroform. Notwithstanding what Dr. Marshall Hall had said respecting the dangerous character of this agent, it had been employed in St. Bartholomew's Hospital in 6000 cases, and in St. George's Hospital from its first introduction into practice most extensively, and yet this was the first case in either hospital in which mischief had resulted from its employment. No doubt, chloroform was a strong poison, and in St. George's Hospital it had never been given, he believed, as in St. Bartholomew's, in petty operations, such as drawing a tooth, &c. The only places, he believed, in which deaths had resulted from chloroform were the Borough hospitals, two deaths having occurred in Guy's and one in St. Thomas's. In these cases he believed that the chloroform was administered by inexperienced persons, and not, as in most other hospitals, by an operator of Dr. Snow's acknowledged ability and experience.

Mr. Solly said that the fatal case which had occurred in his practice had been published by him in all the medical journals. It was quite true that in St. Thomas's Hospital no one was appointed to give the chloroform, but still the effects of the agent upon the patient were watched by a competent person. In his case the surgery-man had certainly held the chloroform, but a dresser watched the patient, and all at once said, "The pulse is flagging." The patient died almost immediately. He thought chloroform killed by paralyzing the heart. In Mr. Hewett's case, he thought the loss of blood produced syncope, and the chloroform so paralyzed the heart as to prevent reaction, and the patient died. In two operations for removal of the upper, and one of the lower jaw, which he had performed, he had relied on the heart recovering from the syncope, to get rid of the effects of the loss of blood, and should not give chloroform when much loss of blood was likely to result from operation. Did Mr. Hewett's patient inhale the chloroform sitting or lying?

Mr. Hewett.—Sitting.

Mr. Benjamin Phillips said that there seemed amongst the speakers to be very great difficulty in arriving at any satisfactory conclusion respecting the cause of death in Mr. Hewett's case. But surely every gentleman present must be aware of the fact, that cases of the kind were by no means of uncommon occurrence before ether or chloroform were employed in surgical operations. A great many cases were on record, where the patient died during the operation; they were as inexplicable as this case, but they did occur when no chloroform had been employed.

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37. *Results of the Use of Chloroform in* 9000 *cases at St. Bartholomew's Hospital.* By Mr. Skey.—One of the most interesting questions connected with the subject of operative surgery relates to the use of anæsthetic agents employed for the purpose of suspending the function of sensation. This question has assumed a moral, as well as a medical type. It has been urged, that sensation is a natural function of the living organism, and that to suspend it by artificial agency is to set at nought the ordinances of nature; and that man is born to suffering, as evidenced by the sensibilities of his body. If the soundness of this argument be admitted, it would be difficult to draw a line which would define the boundary at which moral and *immoral* suffering meet; or to say, in what form of suffering our remedial agents may be justifiably resorted to. The sensibilities of our frame are not given us by nature to the end of promoting pain, but to enable us to avoid it. Corporal suffering is no part of the discipline of the mind; nor can it even be generally asserted that its excess exercises a salutary influence on the character. Every movement of our body instinctively points to the avoidance of bodily suffering; why, therefore, should we not as readily and unobjectionably employ the agency of anæsthetic medicines for the purpose of suspending bodily pain, under the circum-

stances of an otherwise painful operation, as we endeavour to mitigate the bodily suffering of any other patient cast down on a bed of sickness? Will not the objection to the anæsthetic action of opium to a region affected by a neuralgic pain, or to the system generally, hold as strongly as that of another agent of the same principle given to avert the pain of an operation?

The medical arguments against the use of anæsthetic agents have a somewhat better foundation. That great and sudden determination to the brain, and an unnatural circulation of venous blood, result from their employment, is undeniable.

It is undeniable, if the quantity administered be large, and long continued, that symptoms resembling those of apoplexy present themselves, in the form of extreme congestion of the vessels of the face, stertorous respiration, and total insensibility; and it cannot be denied that occasionally its full administration leads to headache, vertigo, and languor of some days duration; and cases are recorded in which death itself has followed in the course of an hour or more after its employment. It must be observed, however, in pursuing this question in strict accordance with the laws of evidence, that we have no *proof*, in the cases above referred to, that death was the direct effect of the supposed cause. The parties administering it were not fully experienced in the mode of its application. They entertain the *opinion* that death was referable to it, while it cannot be disputed that the fatal issue may be attributable to other causes: and, in one example, it appears more reasonable to refer the death of the individual to a suspension of the function of respiration by violence, than to any obnoxious agent circulating through the lungs, or brain. On the other hand, the records of St. Bartholomew's Hospital point to its successful administration in upwards of 9000 cases; in not one of which, including the aged and the young, the healthy, the infirm and the asthmatic, has its employment left a stain on its character, as an innocuous agent of good. Under all circumstances, its careful employment may be unhesitatingly resorted to in all cases, excepting only such as are marked by determination to the brain of an apoplectic type; secondly, under circumstances of great and serious exhaustion from loss of blood; and, thirdly, in diseases of the heart. In these conditions of the system, it is perhaps better avoided.

The agent in general use is chloroform, and one word may be added as to its administration. It appears indisputable that its influence on sensation precedes that on consciousness. I have employed it on several occasions, in which a patient has been conscious of all that has been passing around, and yet who has declared himself to have been totally insensible to pain. This state of his system has arisen from the moderate use of the agent, ample, indeed, for all purposes of utility, though somewhat difficult to regulate in quantity sufficient for the required object.

I prefer its gradual administration. I do not think it desirable to exclude atmospheric air, employed as a diluent during the process of inhalation. Its influence should be gradual, not sudden. I consider its application through the medium of a cambric handkerchief laid on the face, preferable to the use of instruments made for the purpose of excluding atmospheric air, and food should be rigidly avoided before its administration, otherwise sickness will frequently follow.

Against the occasional convictions or objections of others to its employment, I place the strong, and to my own mind the unanswerable fact, that it has been successfully used in so large a number of cases in St. Bartholomew's Hospital since the period of its introduction; that these cases have been indiscriminately taken, and that its objections have not yet made their appearance before the observant eyes of the medical staff of that institution, either by promoting danger during the operation, or protracting the recovery of the patient after it. In one class of cases its employment is especially applicable, viz., in that form of disease in which the pain of an operation is the chief warrant for its non-performance, and in which the recovery from a chronic disease is left to nature, that might be greatly hastened by the hand of art; such, for example, as the removal of a piece of dead bone.

Up to the period of the introduction of chloroform, a surgeon was very un-

willing to subject a patient to the painful process of sawing and chipping away portions of dead bone, with a view to reach the medullary cavity, because the operation was both a painful and a protracted one. The consequence was, that an hospital bed was occupied by a patient thus affected, for many months, to the exclusion, perhaps, of three or more claimants, who would have successively occupied it. But by the aid of chloroform the operation is now performed unconsciously to the patient, and the period of his recovery greatly abridged. With the three exceptions above mentioned, I cannot hesitate in strongly recommending its administration in all cases of large surgical operations; believing its discovery to be the greatest blessing conferred on the profession of surgery during the last century; and although I have seen its employment pushed, on many occasions, apparently to the verge of apoplexy, I cannot say, even in such examples, that the good has not largely predominated. —*Operative Surgery.*

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38. *Pathology and Treatment of enlarged Subcutaneous Bursæ.*—We have given, in a preceding department of this number, the anatomical account of these structures by Mr. Wm. Coulson, and we insert here his observation on the pathology and treatment of them, extracted from the *London Journal of Medicine* for January last.

A correct knowledge of the situation, volume, form, and position of the superficial or subcutaneous bursæ, will, on most occasions, enable the surgeon to appreciate the character of a tumour due to an increased secretion of the fluid in the interior of these sacs, to a thickening of their walls, or to an inflammatory action set up around and within their tissues. The symptom which naturally first attracts attention is the existence of an oval, colourless, elevated swelling, in an unusual situation. Should the surgeon happen to be ignorant of the previous existence there of an original bursal apparatus, for the protection of the integuments and for facilitating motion, he is at first lost in conjectures as to what the swelling may be. This has often happened. But, aware of the existence of the superficial bursæ, and of the localities which they constantly occupy, the first glance at the case not unfrequently reveals to him all he requires to know. I need not therefore dwell on this symptom, remarking merely that the tumour may be small or large, movable, colourless, or deeply inflamed; or occasionally ulcerated on its surface, and discharging pus and serous-looking fluids; or, by long neglect and the influence of time, it may appear as a firm unyielding tumour, without fluctuation or elasticity.

Even when uncomplicated, the enlarged bursæ occasionally, though not uniformly, give rise to symptoms meriting attention in a history of these affections. A certain amount of inconvenience is often felt, varying in intensity with the volume, situation, and condition of the swelling. The enlarged anconal bursa, for example, may attain a considerable size, and yet give rise to no more inconvenience than a slight sense of weakness after fatigue; even the patellar bursa may be enlarged without proving troublesome to the patient. But in others, and these, perhaps, form the majority, it is otherwise. Those in the hand, especially the carpal, cause a great sense of weakness; they are unseemly, and the deformity becomes so unpleasant to the patient, as to induce him to request the removing of the swelling at all risks. In like manner, those over the malleoli deform the foot, and cause other inconveniences. Much lameness often accompanies the enlarged patellar bursa; whilst the enlargement of the bursa over the first joint of the great toe produces not unfrequently the most intense suffering. Inflammation and suppuration follow; and death has been known to supervene from such a course, when injudiciously interfered with by the surgeon. Generally speaking, then, the symptoms indicating the presence of an enlarged bursa are sufficiently well marked to lead to a correct diagnosis.

A knowledge of the course of the tendons will enable the surgeon to discriminate between the enlargement of a superficial bursa, from that more troublesome and dangerous affection, the enlargement of the deep or profound; and he will regulate his treatment accordingly. Of these I do not speak at present, confining my remarks wholly to the system of the superficial bursæ. These swellings, then, interfere with the free use of the limbs in which they happen

to occur. The integuments may inflame and suppurate, and in this condition the case may for the first instance be brought to the surgeon. If neglected now, they cause intense suffering. The cause of the pain is not uniformly the same. In the enlarged bursa over the great toe, for example, considerable pressure may be endured, provided a corn has not happened to be induced by that pressure over the enlarged bursa. When this happens, the pain becomes intolerable, and is seemingly disproportioned, if I may say so, to the other symptoms and appearances; but it is well to know this, for the partial removal of the corn by the knife will often give immediate and great relief. A very usual symptom is a tingling sensation running down the limb, often attended with tenderness on pressure.

The position of the enlarged popliteal bursa necessitates a careful diagnosis; it may be mistaken for abscess, or for other still more dangerous affections. It is sufficient merely to caution the surgeon on this point.

The detection of the enlarged bursæ in the axilla, and in the groins, and the discriminating them from other diseases will occasionally require great attention on the part of the surgeon.

Enlargements of the superficial bursæ have frequently, no doubt, been confounded with encysted tumours; their sequelæ also present difficulties in the way of a correct diagnosis, to be overcome only by a careful observation and history of the case.

Enlarged bursæ may be either simply enlarged, or the enlargement may be accompanied with inflammation and all its usual appearances. Erysipelas may arise in the course of the disease; or at least, œdema of the superficial fascia or cellular layer, in which the bursæ are situated.

Pathology.—The morbid anatomy of this system of organs has not been made the subject of any extensive researches. What has been observed amounts to this: the contained fluid, which in health merely bedews the surfaces of the sac, increases in quantity and alters more or less in quality. Originally, perhaps, more complex than chemists suppose (such at least seems to have been the opinion of Schreger), it may undergo further changes, as a result of chronic or acute inflammation. At times, the fluid resembles the outer layer of the crystalline lens, or the vitreous humours; that is, it partakes more of the character of a semi-solid than of a liquid; at other times, it is much more fluid, or it is more serous, obviously less abounding in albumen.

The semi-fluid substance has sometimes a yellowish appearance; at other times a reddish hue; sometimes it is very fluid, of a dark, dirty colour, the product, no doubt, of an inflammatory action. The sac may be wholly obliterated, or its walls so greatly thickened and condensed as to represent a solid tumour; or the enlarged bursæ may show a dropsical character, with softening of the inner membrane, perforations, and enlargement of the traversing tendinous cords. The absence of many of these bursæ may depend, no doubt, on their obliteration in early years from blows, pressure, or other accidental violence.

The morbid appearances found in connection with the enlarged bursa of the great toe have little or no reference to the smaller bursa itself, but to the deformity caused by the simultaneous displacement of the metatarsal and digital bones of the toe. Nevertheless, when, by a separation or spreading out of the distal end of the metatarsal bones, the head or extremity of the first metatarsal bone becomes so prominent on the inner side of the foot as to be mistaken for an osseous tumour, the integuments passing over it become much attenuated in those cases where the deformity occurs in the adult. If congenital, or occurring in early years, no such attenuation happens. The bursa itself, on dissection, presents a variety of morbid appearances, according to the progress made by the displacement of the metatarsal bone, and of the phalanges of the toe. The ligaments also undergo changes, but I cannot say that I have ever observed the formation of accidental bursæ amongst their fibres. Fungous growths have been seen growing from the inner surface of enlarged bursæ; and ill-conditioned sores are also sometimes present, depending partly on the nature of the surfaces affected, and partly on the constitution of the patient.

Causes.—A variety of causes likely to produce enlargement and subsequent

disease of the superficial bursæ, have been stated by systematic writers. Unfortunately, however, by confounding these organs with the deep bursæ and synovial sheaths of tendons, or by a meagreness of detail, many otherwise interesting observations have failed to improve our knowledge of the disease. The formation of accidental bursæ I have shown to be, in every instance, doubtful, whether on the prominent part of the spine in deformities of this column, or in any other part of the body. The inflammation and enlargement of the bursæ over the great toe, happen how it will, is merely an enlargement of a bursa already existing there, and not a new formation.

Enlarged bursæ are frequently ascribed to severe pressure, sudden or long-continued, to blows, or other external violence; and to such a cause, no doubt, many cases may be traced. At other times, bursæ enlarge wholly independent of any such causes. It has been usual to speak of the enlarged patellar bursa as "the housemaid's knee," of the enlarged anconal bursa as the "miner's elbow," etc.; but many cases of enlargement of the bursæ cannot be so explained. Thus, then, they not unfrequently originate without any assignable cause. It has been said that corns and bunions (diseases very opposite in their nature, though, strangely enough, associated in surgical works), and enlarged bursæ, ganglions, and tumours, are much more numerous in the rich than the poor; of this, however, I have my doubts. The mechanical causes assigned for the production of the enlarged bursa over the great toe, and for the deformity of the foot, so frequently preceding re-enlargements of the bursa, and giving rise to it, can be distinctly refuted. I allude more especially to the theory that such deformities and diseases are caused by tight shoes.

It merits notice, that those who stand out most for the efficacy of mechanical causes in the production of such diseases, have uniformly avoided offering any explanation of the circumstance, that the disease I have just alluded to (enlarged bursa in the deformed foot), appears first not unfrequently in one foot, and is even confined to that foot, be it right or left; but if a rigid shoe were the producing cause, both feet ought clearly to be affected simultaneously. Again, when enlarged bursæ occur, which cannot be traced to any mechanical injury, it not unfrequently happens that they occur at once in both limbs; this need not surprise us, as the laws of symmetry go far to explain the occurrence. Some have carried the idea of the production of enlarged bursæ by accidental causes so far as to include under the same category the actual formation of the healthy sacs, creating the system whose nature I now describe. They have also found bursæ in situations where I cannot say I have ever observed them; namely, around corns, and between these semi-horny productions, and the true skin: but no such productions exist so far as my observations go, nor are they required to explain the intense suffering arising from the pressure over a corn. The wedge-shaped body is at that moment slowly, but surely, growing inwards, piercing the true skin, and tearing its delicate structures asunder. Take off the pressure, or remove the offending wedge, and the pain ceases.

Treatment.—It has been shown that many of the subcutaneous bursæ of the body are occasionally wholly absent, or, in other words, never were present. In this sense, then, they are not essential structures, at least not in these persons. But it has also, I think, been proved that such bursæ, when enlarged, may be obliterated by pressure, or the same result may be affected by pressure and puncture combined; or by inflammation, suppuration, granulation, and consequent adhesion of surfaces; or, lastly, when, losing their original character, they have attained, by means of fibrinous deposits, the appearance and nature of a solid tumour, they may be extirpated by the knife, and so altogether removed. These considerations, aided by a sound anatomy and physiology, which we owe chiefly to Schreger, have led me to the adoption of a simple mode of treatment, applicable to most, if not to all cases, of enlarged bursæ.

Let me first suppose, that a case of enlarged bursa, unaccompanied with any other affection, no matter where placed, presents itself; that of the great toe need form no exception; an enlargement of the natural patellar, anconal, or malleolar bursa; the question arises, how is it to be treated? Abundance of evidence exists to show, that the treatment by rest and pressure, simple friction, blistering, friction with mercurial ointment, iodine, etc., all but uniformly fail in effecting a permanent cure.

When these fail, recourse is had to a puncture, which, made with a lancet, amounts generally to a short incision; or an incision, more or less extensive, is made into the enlarged bursa, the contents evacuated, and pressure applied. This method, no doubt, succeeds; but it is unnecessarily severe, and is not unattended with danger, even in the uncomplicated class of cases. But it not unfrequently happens that, before the surgeon has seen the case, inflammation of the integuments, and of the superficial fascia in which the bursa lies, has set in, with more or less severity. Now, in such cases, the modes of treatment alluded to are clearly inapplicable, and have occasionally been attended with very serious results.

Mr. Key, in an excellent memoir on ganglia or bunion, distinctly refers to a case in which death happened from the incautious interference of the surgeon. He is speaking of the enlarged bursa on the great toe, which complaint, when complicated with the peculiar deformity I have already spoken of, he calls bunion. "I have known," he says, "gangrene of the foot and death ensue from opening an inflamed and suppurating bunion; and in three cases, exfoliation of the bones, with a most tedious and painful suppuration of the surrounding structures." He condemns all interference in such cases, in which opinion I coincide, although maintaining very different views, as to the nature of the affection, from those of the distinguished surgeon whom I have just quoted.

The mode of treatment which I prefer to all others is simply puncturing of the enlarged bursa with a grooved needle, such as is used for exploring tumours and swellings of doubtful character. After the evacuation of the contents, pressure is applied by means of soap-plaster and bandage; this is renewed from time to time, and puncture of the sac repeated if necessary. The result is uniformly a permanent and safe cure. If to this we add the almost painless nature of the operation, we have in this mode of treatment all that is satisfactory to patient and surgeon.

When the enlarged bursa becomes seriously inflamed, we should endeavour, by rest and other means, to subdue the inflammation; nevertheless, a puncture such as I have described may be practiced, even in these cases, with advantage to the patient.

In a case of anconal bursa, accompanied by high inflammation, I punctured the swelling with a grooved needle; pressure was employed; no bad results followed, and the patient recovered. Miss M., æt. 50, applied to me, October 18th, with an enlargement of the bursa over the right olecranon, the skin being highly inflamed. The inflammation had existed for ten days, and became so severe as to compel her to seek advice. I punctured it, and two teaspoonfuls of dirty-looking serous fluid came out; pressure was applied, and at the tenth day she recovered.

Sometimes the integuments over the bursa ulcerate, and under these circumstances pressure may also be employed, as in cases of simple puncture. In cases of long standing, when the enlarged sac has put on the appearance of a sarcomatous tumour, excision is no doubt the remedy, having a due regard to the integuments. The mode of treatment by the seton has been strongly recommended by many good surgeons, and I have myself adopted it with success; but a more enlarged experience has convinced me that this mode of treatment, besides being a tedious and unnecessary process, is not on all occasions unattended with danger. I think it only applicable to those cases where the question arises as to their destruction by the seton, or removal by the knife.

The following interesting cases were communicated to me by my friend, Mr. Cocks, of Hatfield, who has kindly permitted me to publish them.

"I had," says Mr. C., "for several years, an enlarged bursa on the second joint of the left thumb, produced by a blow on the fore part of the saddle, in checking the bridle of my horse. It became as large as a pea and was rather annoying and unsightly; I punctured it with a lancet, when a pinkish crystalline mass came from it; pressure was applied, and it healed. It soon grew again, and again, and the same operation was repeated. But, tired of this plan, after opening it, I rubbed the inside with a camel's-hair brush, dipped in a solution of nitras argenti (4 grs. to ℥j of water). In a few days, it suppurated; the lining membrane sloughed away; it soon healed, and has been so for more

than a year. The next case was under my son. A servant girl, from London, had a very large bursa on the left outer ankle, just below the end of the fibula, stretching across the dorsum of the foot, about two inches long, and at least an inch wide. She had applied to several medical men in town, all of whom advised, 'nothing to be done.' It was opened by my son; solution of nitrate of silver was injected into it, and pressure by compress and bandage applied. In a few days, the greater part of the sac was obliterated; the fluid (which in this was limpid) collected in the non-adhering portion. The same treatment was applied to this part, which was followed by considerable swelling of the foot and leg. The inflamed leg was treated with cold saturnine lotion; but a warm poultice was applied to the tumour, in order to bring on suppuration as soon as possible. The case went on favourably; and in three weeks she was able to go about quite well."

No cases of enlarged bursæ have attracted more attention than that of the great toe; when painful and enlarged, it is difficult to treat, for reasons I have partly explained. So much confusion prevails in surgical works, as to the true nature of the proper method of treatment of this troublesome bursa, when enlarged and inflamed, that I may hope to be excused, if I again direct attention to it. The bursa situated on this part may become enlarged and painful, like any other superficial bursa, and require, for its relief and cure, the treatment I have recommended. But that which, in a peculiar manner, complicates the pathology of this enlarged bursa, is the accidental deformity caused by a projection inwards of the digital extremity of the first metatarsal bone. The phalanges of the great toe itself turn outwards to such an extent as to overlap, or pass under, those of the second—a deformity, in fact, amounting to all but complete dislocation. As the metatarsal bone recedes more and more from the second, the digital extremity seems to enlarge, causing a remarkable prominence inwards of this part of the foot.

In the mean time, as the deformity increases, the bursa is placed daily under pressure, more and more severe; the same shoe no longer fits the form of the foot, now much broader in the distal extremity of the metatarsal region; the bursa enlarges, and becomes extremely painful. A succession of bursæ form on the same spot; they open, and perhaps suppurate; and cases are stated to have occurred in which the joint itself has been laid open, and caustic applied to the inner projecting portion of the metatarsal bone, as if it were of morbid growth.

The disease, then, in its most aggravated form, that is, when complicated with this deformity, consists, simply, in an inflamed bursa, generally produced by pressure, with a partial dislocation of the great toe, mainly dependent on a displacement inwards of the digital end of the metatarsal bone. As these two affections are quite distinct, though often confounded, I need not here inquire as to the causes giving rise to the deformity. It will be sufficient to observe, that tight shoes, or rather shoes no longer fitting the altered form of the foot, however they may give rise to an enlargement of the bursa, in no case produce the deformity; for it is now universally admitted that the deformity is most frequently congenital, or comes on in very early life; that it occurs in hundreds who never wore shoes or boots, and that, even when present, it does not necessarily give rise to enlarged bursæ. The cases which most frequently come before the surgeon occur in persons who get the deformity after the meridian of life. The deformity takes place as a result of the weakening of those structures binding together the metatarsal bones; the larger one recedes from the second, and the muscular forces, acting on the great toe, assist in adding to the deformity, by causing it to approach the others. The treatment of such complex cases is exceedingly difficult. It is here that rest, in the recumbent posture, becomes absolutely necessary; the inflammation must be subdued, or allowed to subside. Should a corn have formed on the enlarged bursa, it had better be cautiously pared down, as the skin has probably become much thinner over the bursa. When the foot has become tranquil, other questions arise as to the treatment, chiefly bearing on the form of the shoe; a boot, properly made of very soft leather, such as is worn in France, may be used without aggravating the complaint. Shoes, I apprehend, are bad, as they necessitate a

somewhat tight ligature over the instep; this causes intense pain immediately below it, or nearer to the toe. In time, the integuments may and do become accustomed to the form of the foot, and the bursa no longer enlarges. This, I think, is the ordinary course of events, even in cases by no means unfrequent where the deformity has proceeded to its greatest extent. When the deformity is natural to the person, the bursæ do not naturally enlarge, and therefore give little or no trouble.

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39. *Treatment of certain cases of Hare-lip.*—[E. A. Lloyd, Esq., in a clinical lecture on surgery, lately delivered at St. Bartholomew's Hospital, related the two following cases of complicated hare-lip, which were highly interesting from the successful application of a new mode of overcoming the difficulties met with in some complicated cases.]

Case I.—*Hare-lip, with a large portion of the superior maxillary bone projecting through the fissure, cured by operation.*—The child, Eliza Fisher, was admitted in Sept. 1849, during the time I was absent from town, and when Mr. Paget was attending to my patients in the hospital. On my return she was handed over to me in a most emaciated state, perfectly pallid, and with patches of eczema impetiginodes on different parts of the face and body, with diarrhœa, very little appetite, and altogether in such a miserable state that no one would have been justified in performing any surgical operation at that time.

A large portion of the superior maxillary bone was projecting through the cleft of the lip; not perpendicularly in the natural position of the bone, but turned upwards and forwards, and projecting horizontally, in a direction nearly at right angles with the normal position of the teeth. The fissure extended through both hard and soft palate. The state of the child's health was at that time so bad that it was little expected there would ever be an opportunity of performing an operation. But, in a short time, by the employment of appropriate medicines, the diarrhœa was checked, the condition of the stomach improved, the appetite increased, and the cutaneous disease subsided. The cod-liver oil was freely administered, and, in a few weeks, the health of the child was so far improved, and it gained so much flesh and strength, that it was considered means might be commenced to obviate the deformity without any risk. Before uniting the fissure in the lip, it was necessary to get rid of or change the position of the projecting piece of the superior maxillary bone. The practice in this hospital has hitherto been to cut off the projecting part; but this plan leaves a gap in front of the bone which is never filled up, and which remains a deformity for the whole of a patient's life, and interferes materially with the power of articulation.

In order to obviate this inconvenience, it was attempted to push the portion of bone back into its proper place, by keeping continual pressure on it by means of a pad. This plan was tried for several weeks, but it failed entirely. I then determined to forcibly break down the piece of bone with a strong pair of forceps, to bend it into the gap, and leave it to become fixed there. This was easily accomplished, the soft parts having been previously divided. A small compress of lint was placed over the part so as to confine the bone in its new position, and kept in its situation by means of adhesive plaster.

No bad symptom whatever followed this operation, and the piece of bone was easily retained in its new place, and in about a fortnight it became firmly fixed there. By this means the gap in the superior maxillary bone was entirely filled up. The ordinary operation for hare-lip was now performed; viz., the edges of the fissure in the lip were pared, and the two even surfaces were brought together in the usual way with hare-lip pins.

There was some considerable difficulty, however, in doing this, for the nose was twisted; also one side of the fissure in the lip was much longer than the other: so that in order to adjust the edges properly, it was necessary to pare the edge of the shorter side of the fissure in such a manner as to make the raw surface of a convex form; thus leaving a surface on the shorter side of sufficient length to unite to the whole of the longer edge of the fissure.

The uppermost hare-lip pin was discharged by ulceration on the third day, which resulted from the great force required to bring the parts into contact at

the time of the operation; and in consequence of this a small aperture was left.

The other pin was allowed to remain two or three days longer; and when it was removed the two raw surfaces were found to have firmly united below, but the aperture left by the ulcerating out of the upper pin still remained. The edges of this aperture having healed, it became necessary to detach the cuticle from them, and then bring them into contact as in the first operation.

I have always found that strong liquor potassæ is the best caustic to apply in these cases, for the purpose of detaching the cuticle; and in this case it was applied. The two raw surfaces were kept in contact by means of a long strap of adhesive plaster passed all round the head and above the ears, the two ends being crossed over the wound in front.

It is necessary to pass the plaster all round the head, otherwise it will frequently slip, and thus fail in keeping the two sides of the cleft in continual contact with each other.

I have never known this plan of treatment fail in any case. In a few days the aperture was perfectly closed, and the child left the hospital, not only cured of its unsightly deformity, but likewise in the enjoyment of a good state of health.

Ol. jecoris aselli was continued with marked benefit during the whole of the time.

The next case I will relate to you was certainly the most unsightly instance of this deformity I ever met with, and one in which the plan of breaking down the projecting piece of bone, instead of cutting it off, was perfectly successful; and a most satisfactory cure was the result.

Case II.—*Double Hare-lip, with the central portion of the superior maxillary bone so elevated as to make a right angle with the rest of the jaw, cured by operation without cutting off the bone.*—In this case, which came under my care at the hospital a few months ago, a portion of the superior maxillary bone, about half an inch in breadth, with a portion of the lip attached to it, was projecting upwards and forwards, at right angles from the natural position of the bone, carrying with it the septum nasi, and thus elevating the nose in an extraordinary way, the alæ nasi being at the same time widely spread out.

This elevation of so large a portion of the front of the face caused a deformity so hideous that the "human face divine" was scarcely recognizable. So dreadful, indeed, was this deformity, that to remedy it by any operation was almost despaired of.

But I determined to make the attempt, even in this case, feeling assured that all cases of hare-lip, however bad they may be, can always be considerably relieved by operation.

I therefore strongly advise you to operate in all cases that may be placed under your care.

This child was also in a most emaciated state; it was brought up entirely by hand; the nature of the deformity rendering it impossible for the child to take any of its food in the natural way.

As the means most likely to afford support and strength to the infant, cod-liver oil was given at first, in doses of one drachm, three times a day: but it was, after a week, increased to two drachms. This having been continued for three weeks the child's health was so much improved, that I determined to break down the projecting piece of bone.

I should tell you that, during the whole of this time, Mr. Ayre, one of my dressers, on whose diligence and attention I can most implicitly rely, had attempted, by slight pressure continually applied, to press down the projecting piece of bone; but this was of no more use than in the case I have just related to you. I first dissected up the central portion of lip from the projecting piece of the bone, and then with a strong pair of forceps broke the bone, and forced it down into the gap. After this was accomplished, a pledget of lint was placed on the broken piece and confined there by means of sticking-plaster carried round the head and face, so as to prevent the bone from again projecting, having previously raised up the piece of lip which I had detached.

The bone having, in a few weeks' time, become firm in this position, I ope-

rated on one side of the lip in the usual way, and brought the edges together by one common suture and one hare-lip pin. There was not room for two pins.

This operation was quite successful, and in about three weeks I determined to operate on the other side. Here a difficulty presented itself, the edge of the fissure on one side being much longer than that of the other, the shorter side being that of the central portion of the lip. The pairing, therefore, of this edge was carried to a certain distance round the lower extremity. By this means the two raw edges were made of the same length, and brought accurately into apposition.

The edges of the cleft readily united, and the patient is now quite recovered, and, instead of being a hideous object, is now a really good-looking child. The nose, too, which was flattened at first, is at present much more prominent.

The child will be brought to the consulting room to-morrow, when you may have an opportunity of judging for yourselves of the success of the operation.

I never saw so much projection of the bone as in this case.

In cases of very young children, I recommend you always to try pressure for some time when the bone is projecting. It may not unfrequently be reduced by that means, and, in proof of this, I could, if it were necessary, adduce many cases.

On no account cut off the projecting piece, for, although the highest authorities have recommended that practice, I feel convinced that it is quite unnecessary, and that by so doing you will render the articulation of the patient imperfect for his whole lifetime; and, in many instances, much deformity will result, from the falling in of the lip, there being no support for it.

Although, indeed, by the removal of the part, you accomplish your object in one operation, that slight advantage should not be considered when the patient's comfort for life is at stake.

We frequently see persons who have been operated on for hare-lip, with a small V-shaped cleft remaining at the bottom, when the paired edges have not united. This, I imagine, arises from the parts retracting below the lower needle, and not being kept in contact long enough to enable them to unite. I therefore advise you, in order to obviate this, in all simple cases of hare-lip to make both the raw surfaces of a concave shape; and by this means you will leave a sufficient quantity below the lower needle to allow for a certain degree of retraction, without a gap in the margin being left. This mode of proceeding I have followed in the hospital for many years.

There is another plan which I have also sometimes adopted to prevent a notch remaining in the lower margin of the lip. I leave portions of what I slice from the edges of the fissure attached to the inferior angles of the fissure; turn them down with these raw surfaces opposed to each other, and confine them in that situation. By this proceeding, instead of a notch being left, the central portion of the margin of the lip may be made to project. It is many years since I first had recourse to this proceeding.

Sometimes the edges of the fissure are so far apart that it requires great force to bring them together, and in these cases they will not readily unite. It is therefore necessary to separate the parts very freely, and far back on either side; and I have met with cases in which the deficiency of lip has been so great that there was no possibility of keeping the edges of the fissure sufficiently in contact without making a perpendicular incision on each side of the lip, commencing at the outer side of each of the alæ nasi. By this means you will always be enabled to bring the edges so easily together that they will readily unite. The incision should not be carried through the membrane of the mouth, but merely through the common integument and muscles. It will sometimes suffice to make an incision on one side only. This cut generally heals readily, and little or no mark remains.

When the surfaces have not united, although the pins have been taken out or have discharged by ulceration, the edges may be readily kept in contact by a long narrow piece of plaster, bound round the head in the way I have described.

Bandages of various kinds have been recommended for this purpose, and

were formerly much used in this hospital; but I think the plaster a far more certain application, as it is less likely to slip, and is much more easily applied.

The coronary artery will sometimes bleed very freely, but it should never be tied, for the presence of a ligature would necessarily impede the healing process, and thus render the cure more tardy. But it is of course of great importance to lose as little blood as possible in all operations on children. I therefore always pass the pins through the two sides of the lip as quickly as possible, and then draw the parts together by the twisted suture, without wasting any time in trying to stop the bleeding, for that will always cease when the parts are thus brought together.

With regard to the age at which this operation is best performed, there has been great difference of opinion; but, so far as my experience goes (and I have operated as early as three weeks and as late as the twenty-first year), I do not think, in simple cases, it makes much difference. In the more complicated cases, the operation should always be performed at the earliest period.

I should, however, avoid, as far as possible, the period between six months and two years, because dentition is then going on. As a general rule, I think that the earlier you operate the better; for the most successful case I ever had was in a child, as stated above, only three weeks old.—*Medical Times*, Feb. 1, 1850.

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40. *Excision of the Head of the Femur.*—Mr. Haynes Walton read a paper on this subject before the Medical Society of London, December 14, 1850. After remarking upon the diversity of opinion concerning the propriety of this operation, the author said, the leading question was, at what stage of the disease the operation should be performed. There were two considerations to be taken into account: 1, the local; 2, the constitutional. With reference to the first, he thought, when the discharge was excessive, thin, dark, and of bad odour; in respect to the second, when there was much hectic fever. If, on examination, disease of the internal organs could not be discovered, especially of the lungs, the operation should take place. There was a question whether disease would not sooner or later come on in these from the effects of the local disorder upon the constitution, if the local mischief were not removed.

The author did not consider the acetabulum to be so often diseased in morbus coxæ as the head of the femur; and that, when diseased, it had greater power of reparation.

He believed non-dislocation of the head of the femur to be diagnostic of soundness of the acetabulum; and that, by exploratory incision, or by passing the finger through a sinus, the state of the acetabulum might often be discovered. If there were no disease in the acetabulum, the operation would most probably be successful, although cases had turned out well where there had been disease in that portion of the joint. Out of fourteen cases, twelve of which had been collected from different sources—the other two having occurred in his own practice—six had proved fatal: one had died from renal disease, another from hemorrhage from the profundic vein, another from diarrhœa: the cause of death in the other three was not given.

The operation was in reality much less severe than it appeared to be: the wasted state of the parts facilitated the operation, while the loss of blood was remarkably small.

The author did not advocate removal of the trochanter as well as the head of the bone. The long interrupted splint was the best apparatus to apply after the operation.

Mr. B. Travers gave great weight to the opinions of Cooper, Cline, and Hunter, all of whom were averse to the performance of the operation in question. He thought that confidence should be placed in the reparative powers of the body, and that, if the case were really curable, the operation would not be required. Even if the operation were successful, the limb was of but little service. From all he had read, heard, and seen, he was of opinion that the successful cases would have got well without interference with the knife. The specimen that had been handed round showed attempts at reparation had been made in those where the operation had succeeded.

Mr. Dampier agreed in the main with Mr. Travers.

Mr. Clarke did not consider a case to be cured even if the patient lived twelve months after the operation, and that death was hastened by the operation.

Mr. Chalk spoke of the difficulty of diagnosing this disease from lumbar and psoas abscess, and questioned if the disease were removed with the head of the bone.

Mr. Gay could not coincide with Mr. Travers; the process of reparation in bone was so tardy that the knife should be employed to assist nature, and that by its use much constitutional irritation could be spared the patient. He would not advise the use of the knife when the manifestation of scrofulous disease was very active.

Mr. H. Smith mentioned the result of some successful cases. One, a boy, æt. 13, operated on in 1845, was now hearty and active, and could walk from Holloway to London. Another, operated on two years ago, a female, æt. 13, was seen yesterday by him, and found in a very comfortable condition, and could walk a mile without assistance. Both were Mr. Fergusson's cases. Another (Mr. Morris's of Spalding) case, operated on in 1849, was quite well, had perfect motion with the thigh, and could walk a short distance.

He had seen mistakes made concerning the position of the head of the bone, and the operation given up in consequence after the first incision had been made. The operation was advisable, because, by preventing anchylosis, the mal-position of the limb was obviated.

Mr. Lloyd had paid considerable attention to the operation in question. In some cases, but very rare ones, the operation was to be performed: he had seen patients who had died from the effects of the profuse suppuration solely; no disease could be found in the internal organs. He thought that most cases of the disease commenced as synovitis, and not from scrofulous deposit in the head of the bone, which latter cause of disease he looked upon as unfrequent.

Mr. Coulson was of opinion that hip disease was generally of a scrofulous origin, and as amenable to constitutional treatment; that the operation should be put in force at the last stage of the disease, when all hope of recovery by other means was given up; that the constitutional disturbance was not due to the local malady, but both had the same origin.

He stated that four post-mortems at the Margate Infirmary had shown the acetabulum to be extensively diseased. In respect of the cases brought forward by Mr. H. Walton, he thought the operation should not have been performed in many of them.—*London Medical Gazette*, December, 1850.

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41. *Case of Ovariotomy; Spontaneous Disappearance of Ovarian Tumours.*—George Norman has recorded, in the *Provincial Med. and Surg. Journal* (Jan. 8th, 1851), an interesting case of ovarian tumour, in which he attempted extirpation, but was unable to succeed in consequence of extensive adhesions, and also alludes to some very interesting cases of spontaneous disappearance of similar tumours.

The subject of the case was twenty-three years of age. When admitted into the United Hospital, 19th Sept., "the tumour appeared to be nearly as large as the head of a child at birth; it was quite movable in the abdomen, and appeared to be attached below by the broad ligament of the uterus, for no doubt was entertained of its being a tumour of the right ovary. It was firm to the touch and gave no sense of fluctuation; her general health had much given way; she had pain extending over the abdomen, and at times severe cramps in the bowels; a fold of vagina protruded full two inches beyond the external pudendum, even when in the recumbent position, and she had endeavoured in vain to keep this up by a pessary before her admission. It was with great difficulty the os uteri could be felt; after a considerable examination, it was found under the arch of the pubes. She was kept in bed, took iodide of potassium, and used iodine frictions to the abdomen, still the tumour increased in size and the pains in intensity.

"The case was considered, by my colleagues and myself, to be an ovarian tumour, and that if ovariotomy were ever advisable, this patient's case was one

calling for it. The prolapsed state of the vagina, the weight of the tumour, and the continued pain, rendering it impossible for her to do anything for her support; the tumour was increasing, and there seemed to be no hope of its growth being arrested. It was agreed that she should discontinue all remedies for a fortnight. At the end of that time her general health had not improved and the tumour appeared to be as large as the impregnated uterus at the fourth, or between that and the fifth month. I then explained to the patient the nature of the disease, told her that an operation had in some instances been successful in the same disease, but that the risk was great and the result doubtful. She replied that she had expected I should make the proposal to her, that she had quite made up her mind, and was ready to undergo the operation whenever I thought proper. A delay, however, occurred from her expecting to be unwell in two or three days, and it was not desirable to operate at or near that period. She became unwell, and after ten days the operation was fixed for the 8th of November. She left off meat for a few days before, and took a mild aperient. Fires were kept for two or three days in the operating theatre, and also in a small ward adjoining it, where it was intended she should remain after the operation, and where she was directed to go to bed the morning of the intended operation.

"At twelve o'clock on Friday, the 8th of November, Dr. Davies, who kindly undertook to manage the administration of chloroform, put her fully under its influence in her bed, apart from all those assembled in the theatre adjoining. In a state of perfect unconsciousness, she was brought into the theatre, and kept in that state during the whole time she remained there. An incision was made in the linea alba, about five inches in length, commencing an inch above the umbilicus, and avoiding that, it was extended downwards towards the pubes. The periosteum was raised with a pair of forceps, and opened to nearly the same extent; instead of any part of the tumour appearing, several convolutions of the small intestine protruded; these with some little delay were returned into the abdomen with great adroitness, by my colleague Mr. Gore, and retained there. During that time, I had ascertained that the anterior parietes of the abdomen adhered very considerably, and firmly, to the tumour on each side of the incision; also that the adhesions below were considerable, and apparently insurmountable, and it was then discovered that a portion of the small intestine, full two inches in length, adhered firmly to the anterior part of the tumour. All hope, therefore, of removing the tumour being gone, no time was lost for the purpose of ascertaining its precise nature, but the integuments were brought together by five common sutures, straps of adhesive plaster were applied, some folded lint placed over with a bandage, and she was removed to her bed in the same state of unconsciousness as when she was brought from it. I saw her four hours after; she was then recovering from the effects of the chloroform, but was suffering from sickness, and pain in the abdomen. Pulse 115, of good strength and fullness. The patient, after continuing in jeopardy for a few days, recovered.

"On the fifteenth day after the operation, it was ascertained that there was no protrusion of the vagina, and it appeared to me on examining the abdomen that the tumour was not of the same size as it was at the time of the operation. The lower part of the wound still remained open, but the quantity of discharge was too small to admit of supposing it came from the tumour. The diminution was supposed to arise from the total abstinence from food for some days, the low diet afterwards, and the constant recumbent position. After this time, it appeared to me that the size of the tumour was gradually diminishing, although she was taking animal food, and by the end of November it was quite evident that the tumour was not more than half its former size. An examination per vaginam was made. The vagina was perfectly natural, and the os uteri was found in the ordinary position. The patient continued to improve, she gained flesh, and her countenance regained the healthy appearance. She was, however, kept to her bed, as the lower portion of the wound was not quite healed; soon after, however, it healed, and she was allowed to get up, from which she found no inconvenience, and she was shortly able to walk about the ward with freedom.

"To account," observes Mr. Norman, "for the very considerable diminution

in the size of the tumour which has taken place since the operation, is a matter of difficulty, and can only be one of conjecture. It may be that a certain degree of inflammation followed the exposure and the handling of the tumour (though there was very little of the latter), and that the vessels of the normal structure of the ovary may have poured out fibrin, and so formed a barrier between the cysts forming the bulk of the tumour and their supply, and this ultimately may have compressed and obliterated them; but be that as it may, the fact of a most important diminution remains, and as the young woman resides in Bath, I shall be enabled to know the more permanent result.

"What has occurred in reference to this tumour may throw some light on cases where such tumours have spontaneously disappeared, of which I believe there are many instances. I had an opportunity of ascertaining one recently. A lady whom I had examined several times nearly twenty years ago had an ovarian tumour full as large as the one we have been considering. I saw her a fortnight ago on another occasion, and had the opportunity of examining the abdomen; I could find no trace of the tumour; her account was that the tumour had remained for some years as when I had examined it, that in the last few years it had gradually diminished, that latterly she could only occasionally find it, and that it was very small. I did not find it, but it may be that, being small, it remains for the most part in the cavity of the pelvis, and she described symptoms which made that probable, but it was not admissible to make an examination per vaginam, to investigate it. Another case has been recently told me by Dr. Robert Ferguson, of Park Street, Grosvenor Square, of a lady who consulted him for an ovarian tumour, of considerable size, and in whom, on her returning to him twelve months after, he could find no trace of it. I know another lady, whose abdomen I had frequently examined, who had a similar tumour full twenty years ago. Sir Astley Cooper also examined it, and gave the same opinion I had given. In this lady, who is now living, it produced nothing more than inconvenience, and if I may judge from the altered appearance of her shape, the tumour must now be very much diminished, but I have had no opportunity of examining it. I have also known an instance where a considerable tumour of the kind formed a communication with the vagina, and after a continued discharge the tumour disappeared, and this person is now living. I know another lady who had for some years a tumour in the abdomen as large as a child's head, which also produced a displacement of the uterus and other distressing and painful symptoms, but which have now entirely ceased, and the tumour became diminished in size. Another instance has been related to me by Dr. Brabent, of a lady who had a large tumour in the abdomen for many years, which always became larger at the time of menstruation, and which gradually diminished after the cessation of that function, and finally disappeared.

"I apprehend the case in which I have operated must be placed as opposed to the propriety of the operation, for if in that case it was not possible to foreknow the existence of insurmountable adhesions, I do not know how anything like certainty can be arrived at; and as this patient's life was certainly in jeopardy for three days, one cannot but think such explorative operations must be attended with considerable danger. Add to this the proportion of deaths after the tumours have been removed, and it will appear probable that the balance will turn on that side. The subject, however, is now fully and perfectly under the consideration of the profession, a great mass of information has been gained, and more will no doubt, for it is to be hoped that every case, whether successful or otherwise, will be recorded, and also those cases of ovarian tumours which have remained harmless, as well as those which have proved fatal, and then we may expect from our profession a dispassionate and correct conclusion."

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42. *Case of Tumour for which the Operation of Ovariotomy was attempted more than twenty-five years ago, with Dissection.*—Dr. Taylor read to the Edinburgh Medico-Chirurgical Society, December, 1850, the case of Magdalene Berry, which had been for twelve years under Dr. Myrtle's observation, and had recently terminated fatally. On dissection, a cicatrix was seen extending from the sternum to the pubes. The abdomen did not appear larger than is usual between the fourth and fifth months of pregnancy. A large tumour was felt,

strongly adherent anteriorly to the abdominal parietes, occupying the lower part of the abdomen, and movable. On opening the abdomen, strong adhesions were found between the cicatrix and omentum. The vessels of the omentum were very large, as was reported twenty-five years ago by Mr. Lizars in his account of the operation, which he attempted for the removal of the tumour. There were firm adhesions between the anterior surface of the tumour and the abdominal parietes, and between its superior and posterior surfaces and the large and small intestines. The peritoneal surfaces of the bowels were adherent at various points. The tumour was found to be a fibrous tumour of the uterus connected with its fundus by a narrow fold of peritoneum. Both ovaries were small, and in their proper position. The uterus was atrophied. There was great softening and dilatation of the heart. The patient, while under Dr. Myrtle's care, was affected with general dropsy. She had derived marked benefit from the use of diuretics and purgatives. Death had taken place from apoplexy. In Mr. Lizars' work on "Extraction of Diseased Ovaries," it is recorded that, immediately after the operation, which it was deemed imprudent to complete, violent inflammatory symptoms supervened, which left permanently well-marked results notwithstanding the abstraction of 111 oz. of blood within thirty-six hours or so after the operation, as well as the administration of antiphlogistic remedies. The actual cautery was afterwards had recourse to, as also a seton drawn through the anterior portion of the tumour and superincumbent soft parts. Dr. Myrtle's communication concluded with some observations on the difficulty of arriving at a correct diagnosis in cases similar to the above.

The president made some observations on the case as an additional illustration of the unjustifiable nature of the operation of ovariotomy. The recovery of the patient, after the multiplied dangers to which she was exposed by the incision, the resulting inflammation and the seton, was very remarkable.

Professor Simpson could not agree with the president in condemning the operation of ovariotomy as in all cases unjustifiable. It had been performed in many cases in which he believed its adoption was unjustifiable; but where the patient was evidently soon to die, in consequence of repeated tappings, or otherwise—and where the question was one of certain and speedy death from the disease, or possible recovery and continuation of life from the chances of the operation—and where, in addition, there was no counter-indication to the operation from adhesions, &c., he believed it might be the duty of the surgeon to afford the patient the chances of escape by ovariotomy; and the actual number of recoveries after the operation seemed sufficient to justify its adoption under such circumstances.—*Monthly Journal of Medical Sciences*, Feb. 1851.

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43. *Femoral Aneurism cured by Compression.*—Mr. Smyly communicated to the Surgical Society of Ireland, November 23, 1850, the following case of femoral aneurism, successfully treated by compression:—

"Patrick O'Gorman, aged 48, a schoolmaster, came under my care in April, 1847, three years and a half ago. He stated that, in August, 1846, eight months before I saw him, when walking at his ordinary gait, he suddenly lost, in a great measure, the use of his right leg, and with great difficulty got on half a mile further. Next day he could not put his foot under him, or leave his bed. He suffered intense pain in the middle of the thigh, in the knee, and down the outside of his leg. It was so severe as to prevent him leaving his bed for a week. It then abated, but has returned occasionally, with more or less severity ever since. He is a married man, sober, and well conducted. He was admitted into the Meath Hospital on the 14th of April, 1847. A pulsating tumour, the size of an egg, having all the characteristics of aneurism, existed in the lower part of the middle third of the right thigh. His general health was good. There was excitement of the circulation, and a slight bruit de soufflet at the heart. In consultation with my colleagues, it was determined to treat this case by compression, so applied as not to interrupt completely the flow of blood in the femoral artery. The patient being bled, and confinement to the recumbent position being strictly enjoined, pressure was made at two different points alternately, by means of two clamps—one applied to the exter-

nal iliac artery, the other to the femoral. This treatment was persevered in with more or less assiduity for nearly three months, with no other advantage than a diminution in the size of the tumour. Weary of the restraint, he desired to leave the hospital; and as he fully understood the use of the instruments, and the plan to be pursued, he was permitted to go out. He was then appointed schoolmaster to the National School at Blackrock, and continued to fulfil his arduous duties for about three months, when, having walked a distance of two miles, he suddenly felt a severe pain in the tumour, extending down the leg. The pain continued unabated for two days, and then gradually subsided. Seven days after the occurrence of the severe pain, he called upon me. On examining the tumour, all pulsation had ceased. This he found to have taken place two days ago, the contents of the tumour to have become consolidated, and all pain to have disappeared. Three months after the cessation of pulsation, I had an opportunity of examining the patient: the tumour, though diminished in size, was still to be felt about as large as a walnut, and very hard.

"November 15, 1850, I called upon him, and found him in the enjoyment of good health, equal to perform the duties attendant upon the management of a large school. A very small hard tumour is still traceable at the seat of the aneurism, and pain is sometimes felt down the outside of the leg. On examining the heart and large arteries, no morbid sound is audible; they are apparently free from disease."

Reflections.—1st. When we consider the protracted period required to accomplish a cure in this case, we learn not to abandon hopes of a cure when our efforts are baffled, and prove unavailing, even for six months.

2d. We find the excitement of the circulation and the bruit de soufflet to subside and disappear on the cure of the aneurism just as similar sympathetic affections are relieved when the cure is affected by ligature. This case, then, meets the objection urged against the treatment by compression—viz., that disease of the heart is more likely to attend it than when a ligature is applied; for we see the same beneficial result follow the cure of the aneurism in this as in those cases cured by ligature.—*Dublin Medical Press*, December 11, 1850.

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44. *New Instruments for the Cure of Stricture.*—Mr. Thomas H. Wakley exhibited to the Medical Society of London (Jan. 25th, 1851) a set of new instruments for the cure of stricture of the urethra. He remarks, in submitting the instruments to the consideration of the Society, that the subject of the treatment of stricture of the urethra had been much discussed within the last year or two, and had given rise to a great deal of controversy. It certainly was not a settled question what should be done in cases of severe permanent stricture. Mr. Syme, the distinguished surgeon of Edinburgh, had, as was known, recommended, where the ordinary means of treatment had failed, the division of such strictures by perineal section. Probably the instruments which he then had the honour of bringing before the notice of the Society would, in some cases at least, render such an operation unnecessary. He had used them in several cases already with very satisfactory results. The instruments he at first used were by no means of a refined or perfect manufacture, yet the advantages obtained were of a decided character. The instruments he now produced had been manufactured by Messrs. Weiss & Co., and, as might be expected, they were very perfectly executed. They consist of—

1. A catheter, thirteen inches in length, of a very small size, slightly curved at the extremity; the stem quite straight, and having at the end a worm for the reception of the screw of the directing-rod.

2. A small thumb-slide (removable at pleasure), screwing closely upon, and acting as a handle to, the catheter.

3. A steel rod, which passes into the catheter as far as the screw, at which part both are united by two or three turns of the rod. The rod makes an addition of five inches to the length of the catheter. The rod and catheter combined form the index-rod, or director, for the metallic and elastic tubes.

4. Of the silver straight tubes, there are nine of graduated sizes; the first is only one size larger than the index-rod, and the others regularly increase in

circumference; the last, or No. 10, corresponding with that number of the ordinary bougie. These tubes are all of a conical shape at their distal extremities, and are so constructed as to fit the mouth of each tube with extreme exactness at the surface of the index-rod. They thus slide with the most perfect ease along that guide, and being directed by it, if the rod be in its proper situation, the tubes cannot take a wrong course or make a false passage, but must pass through the stricture.

5. There are also three *elastic tubes*, composed of a flexible metal, covered with elastic-gum fabrics. This combination gives to the instrument very considerable strength, without rendering it clumsy or bulky. The extremity of each of these flexible tubes has the same form as that of the silver tubes, and fits with perfect accuracy the surface of the index-box.

Supposing, then, that a patient having stricture of the urethra is before the surgeon for operation, the mode of proceeding is as follows:—

First, introduce the catheter, as gently and with as much care as possible, completely through the contracted part of the urethra into the bladder. Having done this, withdraw the stylet, and the surgeon having satisfied himself, by the escape of urine, that the instrument is in the bladder, insert the smaller extremity of the steel rod into the catheter, and having secured it, by making two or three turns of the rod, remove the thumb-slide and then pass No. 3 silver tube upon the index-rod right through the stricture or strictures. In performing this operation, the passage of the instrument will be much facilitated by giving to the flanges a rotatory motion as they are held between the fingers and thumb. This tube being withdrawn, the others may all be passed in a similar manner, and in regular succession. The number to be introduced must of course be determined by the operator. After the last metallic tube is withdrawn, an important object is still to be secured—that of *keeping the command of a free urethra*. How is that to be done? This certainly is a point of considerable importance. Mr. Wakley stated that he was happy to say that it might be accomplished with the greatest ease by passing one of the *elastic tubes* over the index-rod, as was done in the case of the silver tubes. One of the flexible tubes being now in the bladder, *the index-rod is to be withdrawn through it;* this may be done with the most perfect ease and facility. The *flexible tube* may be left in the bladder to serve the purpose of a catheter, and also to afford a safe channel or guide for the re-introduction of the silver catheter or index-rod.

The Society would not fail to perceive that the action of these instruments was safe and simple, and he had the pleasure of stating that the use of them had given him very great satisfaction. The application of the knife for the relief of stricture had been much condemned, although it had been strongly advocated by Mr. Syme, who was undoubtedly a high authority. Still he (Mr. Wakley) could not refrain from expressing a belief that there were strictures which might be removed by the instruments now before him, although Mr. Syme might consider that in such cases the perineal section would be absolutely necessary to effect a cure. Time and experience in the trial of both plans would be required to enable a decision to be formed as to their merits. Mr. Syme had remarked, in a letter published that day, that he had endeavoured to establish two positions: "First. That the division of a stricture by external incision, upon a grooved director, passed fairly through the contracted part, is an operation free from all ordinary sources of danger. Secondly. That, by this procedure, strictures which resist every other mode of treatment are apt to resent seriously even the gentlest use of simple bougies, may be speedily removed so as to allow instruments of the largest size to be introduced without difficulty or inconvenience." The first proposition demanded particular attention, because he thought the plan of treatment now proposed, by tubular expansion, would, in many cases of stricture contemplated by Mr. Syme, render the perineal section unnecessary. If the grooved director mentioned by Mr. Syme could be "passed fairly through the contracted part," of course the small-sized catheter or index-rod now shown could also be guided through the stricture into the bladder. Necessarily, if the one instrument could be passed, so could the other; and the passage being thus secured, the tubes, both metal-

lic and flexible, might be made to take the same course without the slightest danger of making a false passage. In some very obstinate and inveterate strictures, he had succeeded in affording relief, almost without difficulty. Some of the strictures appeared to be of the worst possible form. He was glad to perceive some gentlemen in the room who had been present when the instruments were used at the hospital. Amongst them he observed his colleague, Mr. Gay, who could acquaint the Society with the result of the treatment as pursued in the case of one of his patients. In that instance the man had been treated in the ordinary way, but without success. It was suggested that it was a case which would effectually test the efficiency of the new treatment. The rod and tubes were introduced in the presence of Mr. Guthrie and several other gentlemen. After Mr. Gay had very cleverly, but not without some difficulty, introduced a No. 2 catheter, the metallic tubes from No. 3 to No. 9 were passed without a check. No. 8 elastic tube was then passed on the directing catheter, and the latter instrument withdrawn, leaving the elastic tube in the bladder. He might appeal to Mr. Gay as to the accuracy of the statement. Mr. Wakley believed that in the hands of others the effects produced by the instruments would prove as satisfactory as they had been to himself. At the hospital with which he was connected the opportunities for proving their utility were very frequent, and it would afford him pleasure to show any practitioner who might honour that institution with a visit, the manner in which they were employed. The instruments had been seen by Sir B. Brodie, Mr. Guthrie, Mr. Stanley, Mr. Fergusson, and other distinguished surgeons, who all approved of the principles of treatment which their use involved. In placing the instruments before the Society and the profession, he felt confident that they would receive a fair and candid trial. On a future occasion, he should take an opportunity of offering to the notice of the Society the further results of the treatment.—*Lancet*, Feb. 1, 1851.

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45. *Rupture of the Crucial Ligament of the Knee-joint.*—Dr. Stark relates, in the *Edinburgh Medical and Surgical Journal* for October, 1850, two instances of an injury, which he believes to have been rupture of the crucial ligament of the knee-joint. The symptoms, nearly identical in both cases, were the following: There was no dislocation either of the ankle or of the knee-joint; no displacement of the knee-pan; no rupture of the tendo-Achillis, or of any of the tendons round the knee-joint. The motions of the ankle, and, when the patient was sitting, of the knee-joint, in so far as its ordinary motions were concerned, appeared perfect. In one case, when the patient assumed the erect posture, the knee-joint was found to be preternaturally movable; and, whenever any weight was endeavoured to be thrown on the right leg, the knee fell against the left leg, *and bent with equal facility forwards or backwards.* When the legs were extended, the slightest pressure on the patella caused the foot to be thrown upwards, *and the leg could be bent forwards on the thigh to a certain extent.* No pain was complained of in the knee-joint, but only a sensation of weariness; and there was no redness, nor swelling, nor effusion of blood.

Dr. Stark made several trials on the first patient, to ascertain the accuracy of the diagnosis. When the knee was bound tightly with a handkerchief, and kept slightly bent, the patient could almost bear the weight of the body on it; but the moment he endeavoured to straighten the limb *the knee bent backwards under him*, and he fell to the ground unless supported. The lateral motion of the tibia on the thigh-bone, though freer than usual, was yet so very limited that there was no reason to conclude that the lateral ligaments were injured.

The treatment consisted in fixing the limb in a nearly straight position, just so slightly bent as to allow the flexors of the leg to have a slight advantage over the strong extensors attached to the patella. A strong flat steel spring, fourteen inches long, with a slight curvature, was softly padded and bound to the back of the knee-joint, half of its length projecting down the back of the leg, half extending along the back of the thigh. The foot and leg to above the knee were then bandaged moderately tight. The injury was ultimately recovered from in both cases; but the knees remained weak, and the patients had to use support for a considerable period. In one case it was five months, in

the other three months and a week before the use of crutches could be dispensed with.

Dr. Stark thinks these cases interesting from their rarity, and from their proving that the injury in question may be perfectly recovered from. He infers that cure must have been finally effected by a reunion taking place between the ends of the ruptured crucial ligaments.—*Lond. Jour. Med.*, Dec. 1850.

46. *Cotton Wadding as an Application to Bed-Sores and Varicose Ulcers.*—In the treatment of wounds and ulcers, one great indication is to protect the parts from exposure to the air. Adhesive plasters, and especially collodion, often serve this purpose, but are inapplicable where a large extent of surface is exposed. In these cases we believe the application of cotton-wadding to be an effectual means of fulfilling the indication. Mr. Robert Jones, of Conway (*Lancet*, Sept. 27, 1850), relates the case of a girl, aged 16, who had been suffering from typhus fever, and who had an extensive sloughing sore of the nates, with profuse and offensive discharge. Wine and bark were prescribed, and broth and beef-tea given. Mr. Jones applied some cotton-wadding to the part, with a view of giving her a soft cushion to lie upon, as well as to absorb the abundant discharge. After the application she appeared much relieved. On examination, three days after, the parts covering the spine and the crest of the ilium were granulating, the slough covering them had partially separated, and the parts beneath were looking very well. Mr. Jones has also treated successfully a few cases of varicose ulcers of the lower extremities, by the application of cotton-wadding. The manner of applying it is simply to cover the ulcer, and to dress the patient every second or third day, a roller being applied over the cotton. Perfect quietness, and keeping the limb in the horizontal position, are enjoined; and three weeks or a month are generally sufficient for a cure.—*Lond. Med. Jour.*, Dec. 1850.

OPHTHALMOLOGY.

47. *Preparatory and After-treatment in Cataract Operations.* By Arthur Jacob, M. D.—The value of preparatory and after-treatment as part of the surgeon's care in cataract operations has been fully appreciated, and, in practice, amply made available; but the value of a respectful consideration of all the functions of the animal economy upon which health depends has not been so well understood. It is assumed that a patient should be prepared for an operation by taking physic and abstaining from food, yet a rational man, acquainted with the consecutive operation of each apparatus provided for the growth, repair, and preservation of the living being, may well doubt the correctness of such a view. The universal faith reposed in the practice of giving and taking physic has led practitioners not only to place too much reliance on that resource, but to resort to it sometimes to the injury of the patient, as I find in the case under consideration. In preparing a patient for operation, I do not act on the belief that empty bowels are essential to health, or that what are called *feces* should not be found in the intestinal canal; on the contrary, I proceed on a conviction totally different. If a patient be in good health, notwithstanding an habitual retention of the contents of the bowels beyond the prescribed periods, I do not wish to risk an interruption of health by disturbing the natural functions of the stomach and bowels, and I therefore refrain from giving physic. But if the patient be not in good health, I of course endeavour to bring him into that condition by every means in my power, and resolutely resist every attempt to induce me to operate until I have accomplished that object. Above all things, the state of the digestive organs should be carefully studied, and if found defective, if possible, repaired. Nothing seems to require more attention than the state of the tongue as indicative of the state of the stomach and bowels. If it be white, or coated with discoloured adhesive mucus, the functions of assimilation and nutrition are probably imperfectly performed, and a resulting tendency to destructive inflammation from local injury is engendered.

This I see every day exemplified in accidental injuries of the cornea in stone-cutting, and in chipping and turning metals. If the patient has a clean tongue, and is otherwise free from disease, little inflammation, and still less of destructive inflammation, follow the injury: but if the tongue be coated with a thick yellow adhesive layer, ulceration and formation of purulent matter often ensue. In preparing a patient for operation for cataract, this will therefore demand the first care of the surgeon; especially if he finds, as he often does, a deposition of lithates or other salts in the urine. He will also make inquiry as to the state of the discharges from the bowels, as to their colour, consistence, and proportion of undigested materials, and also as to the frequency of discharge; not looking upon what is called costiveness as evidence of deranged digestion, but rather the reverse: undigested food seldom remaining so long quiet in the alimentary canal as the insoluble remains of thoroughly digested aliment mixed with the excrementitious part of the bile. This inquiry is not, however, so easily made as those who are satisfied with loose statements suppose, and many may think it unnecessary; but convinced as I am that attention to this matter is necessary for the success of the operation, I dwell upon it. Every practitioner has his own way of correcting this derangement of the digestive organs; it would therefore be superfluous to enter here into details on the subject. I myself generally rely on a moderate purgative pill with blue pill or calomel at night, followed by some aromatic bitter infusion, containing a little alkaline salt, in the morning and middle of the day; at the same time regulating the diet by restricting the quantity and quality of the food, as well as the periods at which it should be taken. It is usual, in preparing for this and other operations, to make great alterations in diet, substituting liquid for solid, and vegetable for animal aliments. This, however, must be done with caution, leading as it inevitably does to disturbance of the digestive function and interruption of the assimilating and nutritious processes, if suddenly or exclusively adopted. Without digestible nutritious food, good chyle and blood cannot be produced, and without good blood local injuries are liable to suffer from destructive inflammation. Even in the case of old persons habitually indulging in a glass of wine or other alcoholic stimulant, the suspension of that supply of temporary aid to the nervous system should not be suddenly adopted: in fact, the substitution of "low living," and what are called "slops," for generous diet, should be gradually and sparingly practiced, if practiced at all. In my own practice, I resort to it as little as possible, and from experience feel inclined to resort to it less and less.

In particular cases, the surgeon may be called on to prepare his patient for operation by special direction of remedies to specific derangements of health. Persons of languid circulation and feeble frame must be invigorated by generous diet and tonic medicines, while those of plethoric and bloated habit must be reduced to more suitable condition. Scrofulous or rheumatic constitution or diathesis must, if possible, be corrected; and specific disease of any kind, if present, removed. All this, however, is more easily suggested than accomplished. Scrofula or rheumatism is not so easily eradicated, but it is well, with a view as much to general treatment as to prognosis of the result, that this consideration should be kept in view. When called on to operate on a truly scrofulous or rheumatic patient, the surgeon must be careful to warn the parties concerned that the prospects of complete recovery of sight are less favourable than in cases where the health is good. The after-treatment must be conducted on the same principles as those laid down for the preparatory treatment. The tone of the stomach should be preserved, assimilation and nutrition duly maintained, and the general condition of the patient made comfortable. There is no necessity for immuring a patient after this operation in a close and darkened room. The less of bed the better, and the sooner the drawing-room is made the place of convalescence the better also. With elderly ladies, and especially those of weakly nervous system, this cannot perhaps be so soon done; but the sooner it is done the more rapid and certain will be the recovery. Should inflammation arise, it must of course be arrested, if possible, by the usual means, judiciously adjusted to the constitution and condition of the patient. Indiscriminate purging, bleeding, and mercurializing must not be per-

mitted: but if depletion becomes necessary, it must be carried to the requisite extent, without undue severity. The surgeon should not act on the assumption that, if pain and redness be present, destructive inflammation must be in progress: the pain is generally from the pressure of fragments of cataract on the iris, and the redness often from trivial inflammation of the conjunctiva. Whether it be from this conviction respecting the harmless nature of slight inflammation and pain, or from this operation through the cornea being seldom followed by destructive inflammation, I do not find that I am often called on to draw blood either by lancet or leeches. I am now, however, alluding more to the inflammation which may come on immediately after the operation than to that which may come on at a more advanced period, and which is often of more destructive character, on account of its implicating the whole eyeball; assuming a chronic and sometimes an intermitting, and even a neuralgic character. This inflammation must be treated as other inflammations of the eyeball, and as I have laid down in my treatise on that subject. A strange proposal has been made, probably in consequence of the frequency of destructive inflammation after the *posterior* operation. It has been not only suggested, but actually practiced, to administer mercury to a patient previous to operation, so as to have him in a state of salivation, or on the point of salivation, at the time when inflammation is liable to come on. It is not necessary to warn the surgeon against the adoption of any such puerile application of theoretical assumption. Every one knows that the presence of mercury in the system does not prevent the occurrence of inflammation; and the sooner every one knows that mercury is not so certain an antidote against destructive inflammation as people believe, the better. While considering the after-treatment in this operation for cataract, it is necessary to allude to an occurrence which often takes place, and which causes much distress and alarm both to patients and friends. This is a distressing nausea and vomiting which seizes the patient, generally in the middle of the night of the day of the operation, and continues for many hours, and even more or less during the next day. I attribute it to the pressure of the fragments of the broken-up lens on the iris, and find that it is not followed by destructive consequences; but causing, as it does, so much distress and alarm, I generally order an opiate to be taken when it commences, or direct the attendants to be prepared with some effervescing draughts, and to assure the patient that there is nothing unusual or dangerous in the occurrence. I know not whether this remarkable effect has been observed by others or not, or whether it has been recorded in books, and I have not at this moment time to inquire; but I am sure that I have always noticed it in my lectures. As to local applications, the great object of their use should be to dilate, and keep dilated, the pupil, so as to place the iris more out of the reach of the pressure of the fragments of cataract. This is, of course, to be effected by the application of extract of belladonna; but as there seem to be some mistaken notions prevalent respecting this most valuable and remarkable agent, it may be desirable to correct them. The pupil is, of course, to be dilated previous to the operation, to expose the lens fully and to place the iris out of reach of the needle. Some think it necessary to daub the whole eyebrow, lids, and half the cheek with the black extract, and to leave it adhering to the skin for several hours; some even lay it on the night before. This is a great waste of the medicine, and soils the skin and linen. It is astonishing what a small quantity of this most wonderful agent will dilate the pupil, especially in the eye of a young person. One grain of nitrate of atropia, dissolved in an ounce of distilled water, will form a solution, of which one drop from a camel's-hair pencil will dilate the pupil fully in fifteen, twenty, or thirty minutes: a drachm of good extract of belladonna will do the same. I, therefore, always use these solutions in this way, putting in the drop at any time most convenient in the course of the day on which I operate. The application is neither very painful nor irritating, perhaps about as much as a weak solution of common salt, and leaves no redness after half an hour. I should observe that in aged persons this application of the narcotic to the conjunctiva is sometimes absolutely necessary to secure full dilatation of the pupil. The smearing of the extract on the harsh skin in such subjects will not always effect the object. After the operation,

however, the lids and brow should be painted with the extract to dilate the pupil and keep it dilated; because it may not be desirable to cause any additional irritation by dropping the solution on the conjunctiva. This is a very necessary precaution, for the surgeon should know that, however perfectly the pupil may be dilated before the operation, it generally becomes contracted again during the revolutions of the needle; in fact, mechanical irritation, such as the pressure of the needle or the broken fragments on the iris, causes that organ to act and the pupil to return to its original dimensions. This is a remarkable physiological fact, which I have not seen recorded, but which I have for many years demonstrated in the operation theatre. By way of dressing, I leave a lotion containing a couple of drachms of good extract of belladonna in eight ounces of water, to be constantly applied as a water-dressing with a small scrap of old linen as light as a feather, but I strictly interdict all tying or bandaging, and direct the attendant to allow the rag to fall off when the patient turns to sleep.—*Dublin Med. Press*, Aug. 28, 1850.

MIDWIFERY.

48. *Case of Protrusion of the Hand of the Child through the Walls of the Vagina and Rectum in a case of Head Presentation.*—[Dr. JAMES GRAY read before the Edinburgh Obstetrical Society (Dec. 11, 1850) the following instance of the protrusion of the hand of the child through the walls of the vagina and rectum (without injury to the perineum), in a case of common head presentation, which is so rare, if not unique, in its occurrence, as to deserve being placed upon record:—]

On the evening of the 26th February 1850, I was summoned to attend Mrs. Y. in her first confinement. She resided at a distance of twelve miles from my residence in Perth. I found her in bed suffering from a severe expulsive pain. The cry which escaped her led me at once to make an examination. In doing so, I discovered, as I thought, the head of the child partly born, and covered, as is not unfrequently the case, by the membranes. After the pain subsided, I had time to make a more careful examination. The os externum was found to be thrust forwards and upwards to the front of the pelvis; the perineum greatly distended; the orifice of the rectum dilated considerably—exposing its mucous surfaces to the extent of an inch. The head presented in the second position; the membranes were entire. On introducing the index finger of the right hand into the rectum, I found that one of the child's hands lay upon the right cheek. Another pain soon followed, more fully stretching the perineum and opening the anus; without, at the same time, affecting the outlet of the vagina. To prevent the perineum from being injured, I placed the palm of my right hand over the anus and perineum, carrying my fingers into the vagina so as to prevent the too sudden expulsion of the child. While thus engaged, I felt that something had given way; a gush of fluid followed, and a pressure of something solid against the palm of my hand. This I found to be one of the hands of the child, which had protruded itself through the walls of the vagina and rectum a little above the verge of the anus. The pain returning, I expected every moment, from the state of the parts, and from the powerful efforts made, that the perineum would give way. This was prevented by still carefully supporting the parts, retarding by counter-pressure the progress of the child—and thus giving time for the external parts to relax, which in the course of half an hour took place. The head, consequently, was gradually expelled, and as it emerged under the arch of the pelvis, the hand also descended through the opening in the walls of the vagina and rectum, as described above, until it hung over the left nates of the mother. With the shoulders another difficulty now presented itself: this I managed by pulling the arm in the direction of the spine of the mother, and guiding it through the aperture with my left hand; while, at the same time, with my right I supported the head, and carried it forwards and upwards during the continuance of a pain. The shoulders were soon expelled, and the child was safely delivered. The

cord was tied, and in ten minutes the placenta came away. A bandage, with a pad attached to it, was applied round the abdomen. On the injured part being examined, the rent appeared to commence a little above the verge of the anus, and to extend upwards for about half an inch; but the muscular fibres of the rectum had contracted, and reduced it to a mere fissure. It was carefully cleaned, and a piece of lint introduced into the vagina, to absorb the discharge and prevent it from passing between the lips of the wound. At the end of an hour I left her, with strict injunctions to keep herself quiet, and not to move about in the bed. Next day I learned that she had passed a comfortable night, and was as well as could be expected. She went on gradually improving; the feces were expelled *via naturali*, not in the least tinged with blood. In the course of three weeks she was able to be up a little. Since then I have seen her frequently, and she expresses herself as being quite well.

The circumstances most worthy of remark in this case are—1st. The unfavourable position of the hand of the child. This, in a female who has had several children, would not have been attended with anything peculiarly dangerous; but with a woman who is in her first confinement, the case is otherwise. There is then a great retardation of labour, and the danger of rupture to the perineum. 2d. The unusual position of the posterior commissure of the os externum. This commissure was thrust forwards by the head of the child to the inferior extremity of the symphysis of the pubis, so that the vulva was thereby very much diminished. I have observed that, in many first cases, the external parts are carried forwards; but in no other case that has come under my notice have I observed so great an alteration from the natural position. The state of the anus is also deserving of notice. It was dilated to a size considerably above that of a crown piece—the mucous surface of the rectum being exposed and carried downwards, so as to be in a line with the perineum.

Lastly, there is the protrusion of the hand through the walls of the vagina and rectum; the subsequent closing of the lips of the wound; and the healing process advancing without leaving any fistulous opening between the two canals. This last particular is rarely the result without the aid of a surgical operation.

The treatment adopted consisted in the application of a lotion of the sulphate of zinc, attention to the bowels, and strict rest in the horizontal position.—*Monthly Journal of Medical Sciences*, Jan. 1851.

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49. *Central Laceration of the Perineum.*—Dr. Thatcher read to the Edinburgh Obstetrical Society (Dec. 11, 1850) the following case of this character. Mrs. C., in her first pregnancy, had been in labour for some hours previous to her sending for me. The first stage was over, and the head advancing correctly in the pelvis, and nearly on its outlet. The parts were well relaxed; the pains moderate; but the patient, unhappily, most restless and impatient—in fact scarcely controllable. The sacral part of the vagina appeared much *deeper* than natural, and the head was constantly pressing backwards forcibly, as if wishing to be extruded through the posterior part of the perineum and anus, instead of the superior and natural direction. As the perineum distended, it was quite evident that it was unusually elongated; the *set* of the pelvis reminded me much of that of the Hottentot Venus, pressing pubis and sacrum *out* of the ordinary line. Every exertion was made to guide the head superiorly to its proper position by the fingers, but this was of little use; and before the forceps could be employed, a sudden terrific pain, aided by the *over-exertion* of the patient—to my surprise and great distress, and despite of every retarding exertion—forced the head through the perineal space, between the lower commissure of the labia and the anus, keeping the lower frænum of the labia entire, as also, fortunately, the sphincter ani. The body was extracted in the same manner, as also the placenta. The patient was told that she had hurt herself by this unhappy exertion.

In the afternoon the parts were examined, and the above statement confirmed. The divided perineum was uniting at its edges, and appeared like two portions of a saw closing. They were kept united by ligature, and healed most favourably. The vagina also was kept clean, and after a fortnight all the parts

were in their normal state. I have heard of two other similar cases, but this rare case is one evincing what may occur in any deviation from natural conformation, in defiance of the best care and aid.—*Ibid.*

50. *Case in which the Cæsarian Section was performed, with remarks on the peculiar sources of danger attendant on the Operation.* By CHARLES WEST, M. D. (Communicated to Royal Med. and Chirurg. Society, Jan. 28, 1851.) The subject of this history was a young woman, aged 27, a patient of Mr. Wren, of Bronlow street, whose health had always been indifferent, but whose person was not apparently deformed, and who reached the end of her first pregnancy without manifesting any symptoms especially calling attention to the state of her osseous system, with the exception of pains of a rheumatic character, and difficulty in walking, which last became very great during the last two months of her pregnancy. When labour came on, which it did at the end of the full period of utero-gestation, the existence of extreme pelvic deformity was at once ascertained by Mr. Wren, in whose opinion, as well as in that of Dr. West, Dr. Murphy, and Dr. Ramsbotham, the performance of the Cæsarian operation was indicated. It was accordingly performed by Mr. Skey fourteen hours after the commencement of labour, and eight hours after the rupture of the membranes, uterine action having, however, been feeble from the first, and having almost ceased since the escape of the liquor amnii. The patient was by her own desire subjected to the influence of chloroform, before the operation was begun; no difficulty was experienced in its performance; and a living female child was extracted. Very formidable hemorrhage succeeded the removal of the placenta, and the subsequent contractions of the uterus were very tardy in their occurrence. The patient was left in a state of great exhaustion, from which she never completely rallied, and died in 108½ hours after the operation, apparently from the conjoint effects of the hemorrhage during the operation, and of the shock to the nervous system. The treatment consisted in the administration of stimulants and nourishment, both by the mouth and in enemata, and the patient was kept in the same manner almost throughout under the influence of opium. The body, on examination after death, presented no evidences of serous inflammation, but the uterine wound was gaping widely, and even that of the abdominal walls was but partially closed. The pelvis presented, in a most marked degree, all the characteristics of that deformity which is produced by mollities ossium; the pubic bones being projected into a beak 1.2 inches in length, the width of the pubic arch being reduced to .6 of an inch, and the distance between the tuberosities of the ischia to 1.2 inch. The writer, having noticed the high maternal mortality resulting from the Cæsarian section, and which he estimates at much more than the number of 63 per cent., at which the statistics of all cases recorded since 1750 place it, since the results of cases occurring in hospitals abroad yield a maternal mortality of 79 per cent., and of cases in this country of 85.4 or 87.5 per cent., according to two different estimates, proceeded next to point out the apparently inevitable causes of this high mortality. These causes he referred to four heads, and illustrated their respective influence by reference to a table of 134 fatal cases in which the body was examined after death. The four heads are as follows: 1st. The danger arising from hemorrhage, which proceeds from a source different from that whence bleeding takes place in any other operation, and which is not capable of being arrested by the same means as suppress it under ordinary circumstances. 2d. That dependent on the shock inflicted on the nervous system, as well by the violent interference with the most important process that ever goes on in the organism within the same limited time, as by the injury to a part so important and so richly supplied with nerves as the uterus of a parturient woman. 3d. The hazard inseparable from extensive injury to the peritoneum, when unblunted in its sympathies and unaltered in its texture, as in cases of ovarian or other tumours, for the removal of which a similar exposure of the abdominal cavity is sometimes practiced. 4th. That which results from the infliction of a wound on the uterus at a time when, in the ordinary course of things, the processes which nature is prepared to carry on in it consist in the disintegration and removal of its tissue—processes the very opposite to those essential to

the repair of injury. From a consideration of all of these sources of danger, to the last of which attention has hitherto scarcely been directed, the author arrived at the conclusion, that they being so serious, and so beyond the power of art to prevent, the rule which forbids the performance of the Cæsarian section, wherever there is a reasonable probability of accomplishing delivery by the natural passages, is founded on solid grounds, and ought to be adhered to. —*Med. Times*, Feb. 22, 1851.

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51. *Case of Cæsarian Section.* By HENRY OLDHAM, M. D. (Communication to Royal Med. and Chirurg. Society.) The subject of this case was a rickety, deformed girl, aged 23, unmarried, pregnant with her first child, and seven months gone in gestation, when first seen by Dr. Oldham. On examination, the pelvis was found to be reduced to two inches in its conjugate diameter, and the uterus was much anteverted.* The membranes were punctured for the induction of premature labour, in a few days after she was seen, September 23d, 1850. On the following morning, the left arm was found in the vagina, but labour did not come on until nine A. M. on the 26th. In twelve hours, the os uteri was dilated, and then some attempts to deliver her were made. The child could not be turned; but, by drawing down the protruding arm, which, from commencing decomposition, soon gave way, and pressing the abdomen from below, the head was brought over the brim, and was at once perforated. For four hours, the crotchet was employed, both inside and outside the head, the bones of which were completely torn up, but without drawing it through the brim. At this time, a new impediment was found to have arisen, from the descent of the right hand and a foot, by the side of the collapsed head, into the pelvic brim; and, on watching the effect of labour pains, all these parts were felt to be squeezed together in the narrow inlet of the pelvis, each preventing the other's descent. It was attempted to bring down either the foot or hand, but only the slippery tips of each could be touched, and they could not be moved. The patient had now been seventeen hours in labour, and it became a question for serious consideration and consultation, whether she would be able to sustain the necessary efforts for her delivery, and whether it would not be for her benefit to perform the Cæsarian section before exhaustion came on, which at length was determined on. The operation was performed by Mr. Poland, without difficulty, and with little hemorrhage, the patient being under the influence of chloroform. The incision, five inches long, was slightly curved, and a full-sized seven months' fœtus was removed, and afterwards the placenta and membranes. For two days the patient did well, but then exhaustion came on, and she died. While she lived, she was kept under the influence of opium, and was sustained by simple cold drinks. On *post-mortem* examination, there were some slight traces of peritonitis near the uterus. The external opening was closed, and its edges adherent, but the uterine incision was gaping. The larger omentum was indurated and inflamed, and so drawn across the uterus, above the incision, as to prevent any discharge from the latter organ escaping into the peritoneal cavity. Two practical questions were suggested by this case: 1st. What was the best plan to attempt to follow out in the delivery at first? 2d. Were the complications such as to justify the Cæsarian section? With respect to the first, two plans of treatment might be adopted: 1st. To induce labour, and deliver by craniotomy. 2d. To allow her to go to term, and then perform the Cæsarian section. In determining in favour of the former, the author was guided by the great probability—with a conjugate diameter of two inches—of being able to deliver with the crotchet, and he considered that his inability to do so arose from the complex presentation. With reference to the second, he was induced to have recourse to the Cæsarian section, from a conviction that the patient would probably sink under the prolonged efforts at delivery; and a case was related, which occurred in the Lying-in Charity, at Guy's, under Dr. Ashwell, where a woman with a far less contracted pelvis died undelivered, after the powerful and sustained efforts to relieve her. It was remarked that the girl had but a feeble

* The skeleton pelvis was exhibited.

constitution, which would ill support so hard a trial of its powers, and the condition of the vagina was particularly noticed as retaining the marks of early age, being structurally weak and easily lacerable, and most unfavourable for a long craniotomy operation. Under these circumstances, the Cæsarian section offered a speedy and sure, instead of a prolonged and doubtful delivery. It was not yet forbidden from exhaustion, or any signs of inflammation; on the score of suffering, it contrasted most favourably with the persistence in the use of the crotchet; and, upon the whole, it was judged to offer a better chance of ultimate success. The curve in the incision was suggested to catch the outline of the muscular fibres on the inner surface of the uterus, and so favour the closure of the wound. The scanty hemorrhage during the operation was in a measure accounted for by the uterus being at the seventh instead of the ninth month, by the placenta being attached to the posterior wall, and the uterus being opened low down towards the cervix, where the veins were less developed. Chloroform was said to be a gain in every way, and the after-treatment by opium appeared satisfactory.—*Med. Times*, Feb. 22, 1851.

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52. *The Cæsarian Section and Premature Labour.*—The reading of the two cases presented in the preceding articles gave rise to a very stormy, wordy, and rather personal discussion in the Royal Medico-Chirurgical Society, which is reported in full in the number of the *Lancet* for Feb. last. As little that is new seems to have been elicited, we shall merely give a brief abstract of the remarks of Dr. Robert Lee as reported in the *Med. Times* for 22d Feb.

"Dr. R. Lee gave a historical notice of the Cæsarian operation, and of the induction of premature labour. He stated that the former operation had been performed four hundred times in Europe, forty-eight of which were done in the British Islands, besides several fatal unrecorded cases. The opinions of Guillemeau, Ambrose Paré, Mauriceau, condemnatory of the operation, were cited. Mauriceau asserted that there were few, if any, cases in which the accoucheur could not extract the child, living or dead, whole or in pieces, without the necessity for the Cæsarian section, and in this opinion Dr. Lee concurred. In England, in 1756, the operation for inducing premature labour was first adopted, and was successfully carried into effect by Dr. Macaulay, but for several years afterwards was rarely practiced, while the Cæsarian section was performed, and generally ended fatally. Dr. Denman wrote strongly in favour of inducing premature labour; he stated that it was a perfectly safe operation for the person on whom it was performed. It has been repeatedly practiced with success during the last fifty years. Dr. Merriman has practiced it thirty times; Dr. H. Davies on fifty occasions, and he himself (Dr. Lee) on as many occasions. In Dr. H. Davies' cases, twenty-nine children were born alive, and all the mothers recovered. In one case, Dr. Lee stated he had performed it twelve times, the woman being now alive. It is applicable in all cases of distortion; in the slighter cases at the seventh month, in those more severe, about the middle of pregnancy, or at the sixth month. If it were generally adopted, there would be no necessity for the Cæsarian section. He (Dr. Lee) was the first to induce premature labour in first pregnancies, and he had done so in several cases where a high degree of distortion existed. He then read a table of twenty-three cases of Cæsarian operation performed in these kingdoms, in all of which, save two, which he considered as doubtful cases, the mothers died. Dr. Lee then commented on Mr. Wren's case. He contended that the characteristic symptoms of mollities of the pelvic bones existed early, and that premature labour should have been induced, in which case the unfortunate woman might now have been alive. A case in which the Cæsarian section was performed at St. Bartholomew's in January, 1847, was next the subject of comment. Here, he said, the existence of great distortion of the pelvis was detected at the sixth month, and yet premature labour was not induced. The patient was admitted into hospital in November, the seventh month of pregnancy, and operated on in the following January, dying thirty-six hours after. He (Dr. Lee) thought the case was most favourable for inducing premature labour, to which, however, no allusion was made in the report of the case published in the medical journals. He concluded by speaking of a

case at Cupar, in Fife, to which Dr. Simpson was summoned to perform the Cæsarian section, but the woman was delivered before his arrival. He denounced the Cæsarian operation in strong and decided language.

53. *Injury of Cranium and Wound of the Brain in a New-born Child—Recovery.*—In July, 1839, Dr. Lagae was called to a woman, aged 34, who had been in labour forty-eight hours. Unsuccessful attempts had already been made to extract the child by the forceps, and subsequently by Smellie's perforator and a blunt hook. Dr. Lagae found it necessary to perform the Cæsarian operation. The infant was very weak, and scarcely uttered a few moans. It had a very extensive wound of the cranium, a little to the right of the sagittal suture, and a few lines in front of the posterior fontanelle. The brain was exposed, and seemed reduced to a state resembling soup mixed with blood: a small quantity of cerebral substance had escaped through the wound, and, for several days, portions continued to be removed by suppuration, in a state of detritus. The treatment consisted in the application of compresses dipped in cold water; and the child recovered. The mother was restored to health in a few weeks.

Nine months after, Dr. Lagae exhibited the child to the Medical Society at Roulers. The deficiency in the cranium was then of the size of a two-franc piece, or even less. Even remembering the tendency which the cranium possesses in young children to repair losses of its substance, it must be admitted that the loss was much more considerable at the time of birth. It is also worthy of remark that the child appeared to be as intelligent as other children of the same age.—*London Journ. Med.*, Dec. 1850, from *Bull. Gén. de Thérapeutique*, 1849, t. xxxvii.

54. *Quintuple Birth—The Deutsche Klinik*, for Nov. 23d, states that, on the night of the 11th of that month, a peasant's wife, at Alt-Rehfeld, was safely delivered of five living children. One lived three hours, another twelve; the other three survived. The mother was doing well.

57. *Polypous Excrescences from Umbilicus in New-born Children.*—To the extensive category of affections of the umbilicus, Dr. Farrège has added another, of comparatively small importance, but worthy of the attention of practitioners, on account of the anxiety which it may cause to the mothers. We refer to small polypous excrescences developed between the furrows of the umbilical fossa. The following case is an example.

In August, 1848, a female child, three weeks old, was brought to Dr. Farrège. The mother had observed a red body at the umbilicus, which she attributed to misarrangement of the cord by the midwife. The latter examined the child, but was unable to discover anything, because the body, hidden among the folds of the fossa, only projected when the child cried. On turning aside the edges of the umbilical fossa, M. Farrège discovered an excrescence of the size of a large pea, red and granulated, and bleeding easily when touched. A ligature was passed round the base, which was pedunculated, and the excrescence fell off on the third day. The wound was touched with nitrate of silver, and the disease did not re-appear. In another similar case, Dr. Farrège excised the pedicle of the tumour by means of scissors curved on the flat surface, and cauterized the wound. To recognize the existence of the disease at the commencement, it is requisite to make a very close examination, taking care to separate the lips of the umbilical fossa, which, in very young children, lie very close to each other. The treatment is very simple, consisting in excision or ligature, followed by cauterization.—*Lond. Journ. Med.*, Dec. 1850, from *Revue Méd.-Chirurg.*

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

56. *Identity.*—The following curious anecdote is related in Merrimee's History of Pedro the Cruel. "One night, a quarrel took place and a man was killed in the streets of Seville. The victor made his escape, unperceived by the

alguazils, who as usual arrived when all was over. One person only, an old woman, had witnessed the fight; but the night was dark, and the gallants being muffled in their cloaks, she had not been able to distinguish their features. She, however, deposed to one circumstance—the knees of the unknown combatant made a slight crackling noise of the joints as he walked. This was quite sufficient to designate unmistakingly the king himself, for this slight infirmity of his knees was known all over Seville. What was to be done? The law required that the murderer should be decapitated, and that his head should be exposed on the spot where the crime had been committed. Pedro, after giving the old woman a small sum of money, ordered the royal bust to be carved in stone, and placed in the street where the duel had taken place."—*Edinburgh Review*, No. 185. T. R. B.

57. *Abortion.*—In *Mills* v. *The Commonwealth*, on a writ of error, the Supreme Court of Pennsylvania decided, in the case of an indictment for an attempt to commit abortion, that a count charging the defendant with an attempt to produce the miscarriage and abortion of the mother instead of the child is well laid.

It is not the law in Pennsylvania that a count should have charged that the woman had *become quick*. The words *pregnant and big* are sufficient to this indictment.—*American Law Journal*, New Series, Vol. II. p. 68. T. R. B.

58. *Ancient Trial for Impotence.*—There is, in the New York State Library, a curious book entitled "Processus Divorcii inter Joannem Gyb, in Strather, et Margaretam Hillok, A. D. 1563," evidently a modern reprint, if indeed it be not printed from the MS. Its contents purport to be taken from the register of the Kirk session of the parish of St. Andrews, in Scotland. Margaret, his "spouse," accuses John of impotency, having been his bedded wife for upwards of two years. The superintendent ordered them to "coheir" and keep "company together, &c., for the space of three-quarters of a year." At the end of that time, John denied his impotency, and confessed that he had camall "dayl" with another woman and also with his wife, "but nocht in lych manner as with the other female." Another order to cohabit within fifteen days, on pain of calling in the temporal power. Finally a trial was held. Gyb confessed his utter impotency as to his wife, but testified that since the present suit he had repeatedly had intercourse with a servant woman of his mother, and this female testified to the same. She was urged thereto by the mother, to the effect that the "verite mycht be haun of the brut rased agains Jhone be Margret Hillok, his wyff. And that hyr fee and reward suld be any blak kyrtyll."

On the 25th of June, 1563 (upwards of a year since the commencement of the trial), the superintendent "fyndes na cause of impotencye prouyn."

Whereupon, Margaret in July applied for a divorce, on the ground of adultery, proven against John, which was granted, and he was transferred to the temporal power for punishment of his crime. T. R. B.

59. *Absence of Milk after Delivery.*—This is generally considered as a rare occurrence. A case is mentioned by Dr. Hunt (*Buffalo Medical Journal*, vol. vi. p. 121), of a female with her fifth child, in which the secretion was wanting. There was no swelling or pain in the breast. She had never given milk; the children had all been brought up "by hand," and three of them were now living. The menses were regular. T. R. B.

60. *Present Law of Virginia concerning the Crime of Abortion.*—From an interesting communication in the *Medical News*, we learn that, until the late revision of the code, the law of Virginia on this subject was the common law, according to which, the procuring of abortion *before quickening* was not an indictable offence, if done with the mother's consent. The alteration proposed by the revisers, while it made the destruction of the fœtus, under the circumstances just mentioned, criminal, yet recognized in principle the exploded distinction of the common law, by awarding very different grades of punishment to the procurement of abortion before and after quickening. There was another

objectionable part in the proposed enactment, inasmuch as it did not exempt from the penalty of law the inducing of premature labour by the physician, unless done to preserve the life of the *mother;* the claims of the child to the benefit of the operation in certain cases were overlooked.

Under these circumstances, the correspondent who makes the above communication states that he made a statement to the Revisers as to the injustice and unreasonableness of the above enactments. These gentlemen yielded to his application, and reported the following clause, which was agreed to by the legislature, and is now the law of the State:—

"Any free person who shall administer to, or cause to be taken by a woman, any drug or other thing, or use any means, with intent to destroy her unborn child, or to produce abortion or miscarriage, and shall thereby destroy such child, or produce such abortion or miscarriage, shall be confined in the penitentiary not less than one, nor more than five years. No person, by reason of any act mentioned in this section, shall be punishable where such an act is done in good faith with the intention of saving the life of such woman or child."

The expression "any free person" has reference to the different grades of punishment awarded to free persons and slaves, as set forth in another part of the code.

While this important improvement of the criminal law is a matter of congratulation, it is to be regretted that another improvement, also suggested by the writer, did not meet with equal favour, and which was to substitute *a jury of physicians* for a *jury of matrons* in cases of doubtful pregnancy. Certainly the lawmakers could scarcely be aware of the melancholy blunders that the latter have sometimes committed. T. R. B.

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61. *Legal Definition of what constitutes a Wound.*—The English courts are gradually coming into a correct exposition of the word. In *Rex* v. *Smith*, which I have quoted in another place, (*Medical Jurisprudence*, last edition, vol. ii. p. 287,) the judge said, "There must be a wound (that is, if the skin be broken), whether there is an effusion of blood or not; it is within the statute, whether the wound is external or *internal*." In that case, there was a blow with an iron hammer on the face, by which the left jaw was fractured in two places, and the skin inside of the mouth was broken, but not at all externally.

In a later case, *Regina* v. *Warman*, the death of the deceased was caused by a blow on the head with a piece of wood, (a swingle.) The surgeon deposed that death was caused by extravasation of blood, which pressed on the brain. "There was no external breach of the skin on the head. I found a collection of blood in the back part of the head. On examining and cutting into the scalp, I found a collection of blood between the scalp and the cranium, just above the spot where, within the cranium, I found the pressure on the brain. I call that a *contused wound*, with effusion of blood. This is the same thing as a bruise. The internal part of the skin was broken. Medically, we call the breaking of the skin, whether externally or internally, a wound."

The verdict was that of guilty, and the fifteen judges held that the conviction was right.—*Carrington and Kirwan's Nisi Prius Reports*, vol. ii. p. 195. T. R. B.

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62. *Procuring Abortion, or rather Premature Birth.*—A female, a single woman, went to the house of the prisoner, and having informed her of her pregnancy, underwent an operation, as described by witness, of having a pin thrust up into the womb. This was repeated for several days, and it ended in the delivery of a male child, the female being about six months advanced in pregnancy. The child was born alive, but died about five hours afterwards. A medical witness stated that there were no unusual appearances on the body of the child; that it was a healthy child, but, being born at that period of gestation, it was impossible that it could live any considerable length of time, separated from the womb of the mother. It was incapable of maintaining a separate and independent existence. The witness further said, "Judging from the healthy appearance of the child, I cannot suppose that the premature delivery was spontaneous. The operation described would probably and naturally produce

that premature delivery. It might be produced by a fall or any sudden shock received by the mother, but in this case I have no doubt that it was in fact produced by the acts of the prisoner."

The judge (MAULE), in summing up, said, "The prisoner is charged with murder, and the means stated are that the prisoner caused the premature delivery of the witness, by using some instrument for the purpose of procuring abortion; and that the child so prematurely born was, in consequence of its premature birth, so weak that it died. This, no doubt, is an unusual mode of committing murder, and some doubt has been suggested by the prisoner's counsel whether the prisoner's conduct amounts to that offence; but I am of opinion (and I direct you in point of law) that if a person, intending to procure abortion, does an act which causes a child to be born so much earlier than the natural time, that is, born in a state much less capable of living, and afterwards dies in consequence of its exposure to the external world, the person who by her misconduct so brings the child into the world, and puts it thereby in a situation in which it cannot live, is guilty of murder. The evidence seems to show clearly that the death of the child was occasioned by its premature birth, and if that premature delivery was brought on by the felonious act of the prisoner, then the offence is complete." *The Queen* v. *West, Carrington and Kirwan's Nisi Prius Reports*, vol. ii. p. 784.

T. R. B.

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63. *Poisoning with Cocculus Indicus.*—The prisoner was indicted for administering poison, and it was proved that two cocculus indicus berries had been given to a child nine weeks old. The child, after having swallowed them, threw up one by vomiting, and the other passed through her body, in the course of nature, and was found next day in her clothes.

Two medical witnesses, called on the part of the prosecution, proved that the cocculus indicus berry is classed with narcotic poisons: that the poison consists in the presence of an alkaloid, which is extracted from the kernel; that all the noxious properties are in the kernel; that it has a very hard exterior or pod, to break which much force is required.

One of these witnesses added that the berry, if the pod is broken, is calculated to produce death in an adult human subject, though he did not know how many berries would be required for the purpose; that he thought the poison contained in the kernel of two berries, if the pods were burst, and if retained on the stomach, might produce death in a child nine weeks old, but that the berry could not be digested by the child, and that it would pass through its body, without the pod being burst, and so would be innocuous (as had, in fact happened in the present case).

The counsel for the prisoner objected that the berries were not poison within the meaning of the statute, for that, though the kernel of the berries contained poison, yet the pod rendered the poison innocuous.

The judge (Vaughan Williams) overruled the objection, and left the whole case to the jury. Verdict, guilty.

Judgment of death was recorded, but execution was stayed in order to submit the point raised by the prisoner's counsel to the consideration of the judges.

The discussion before them in the Exchequer chamber is given in detail by the reporter, and is quite interesting.

The counsel for the prisoner observed that the indictment was founded on the statute 1 Victoria, chap. 85, sect. 2, which makes it a capital felony to administer to, or cause to be taken by, any person, "any poison or *other destructive thing*," with intent to commit murder. The real question is, whether the berries in the state in which they were administered were "poison." The prisoner thought he was giving a destructive thing, but did not do so. It was inquired of the counsel by the judges what he would say if arsenic was given in a globule of glass? again, if arsenic was put in a paper envelope and that wrapped in oiled paper, and administered? He contended that in "such states, it could not be a destructive thing." But it was replied, if a person gives poison in too small a dose, you would say that was not within the statute, as it could not be destructive. If you are right in so saying, persons might give doses of arsenic and speculate

on the size of the dose. Finally, Chief Justice Wilde remarked, "The question here is whether the prisoner administered poison with intent to murder. The kernel of the berry was a poison; but he administered it in a condition in which it was not capable of doing injury. Is that administering poison? If a person administers poison with intent to murder, but accompanies it with something which prevents its acting, we all think that it is the offence provided for by this enactment, and that the correction must be affirmed." Justice Alderson said, "This is very different from the case of a person administering an innocent thing, and thinking it poison; there he does not administer poison at all; here he does." The other judges concurred in affirming the conviction. *Regina v. Cluderoy, Carrington and Kirwan's Nisi Prius Reports*, vol. ii. p. 707.

Without impeaching the leading statement of the medical witnesses, that the peculiar substance here called an alkaloid (*picrotoxine*) is contained in the kernel alone, and that it is poisonous, it appears to me scarcely yet proved that the shell or pod is innocuous. Pelletier and Courbe have found two alkaloids in it in minute quantities.—*See Christison's Dispensatory*, Philad. edit., p. 397.

T. R. B.

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64. *The Diseases to which Manufacturers of the Sulphate of Quinine are liable.* By M. A. Chevalier.—The above article has now been largely manufactured in France, during thirty years, and it seems to produce peculiar diseases among some of the workmen. M. Chevalier has ascertained that they are liable to a cutaneous affection, which forces them to intermit their work for several weeks at a time; and, indeed, some have been obliged to quit the business altogether.

M. Zimmer, a manufacturer of sulphate of quinine, at Frankfort, mentions that some of his workmen, engaged in pulverizing cinchona, are attacked with a peculiar fever, and which he calls cinchona fever. It has affected some so severely that they also were forced to give up their occupation. This disease has not been noticed in France.

But the cutaneous affection attacks not only the labourer, and that whether he be temperate or intemperate, but frequently also those who merely come in contact with the emanations from the manufacture. M. Chevalier is not at present able to point out the predisposing causes productive of these diseases.—*Comptes Rendus*, October 7, 1850.

I copy the above, as it seems now to be conceded that sulphate of quinine in large doses may be poisonous. If this be so, the above results are not surprising.

T. R. B.

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65. *Curare, Researches on it* by MM. Pelouse and Cl. Bernard.—Curare is a poison prepared by the savages that inhabit the forests on the borders of the Upper Orinoco, the Rio Negro, and the Amazon. Although it has been known as such for some time, still its precise nature is not understood. The Indians who sell it keep its preparation a profound secret. It is only known to their priests.

According to Humboldt, curare is an aqueous extract obtained from a plant of the family of the Strychnideæ; and according to Boussingault and Roulin, it contains a substance analogous to a vegetable alkaloid, and which they term *curarine*.

The information received from M. Goudet agrees entirely with that given by Humboldt, as to its being an aqueous extract; but he adds that, before the extract becomes perfectly dry, the Indians of Messaya add to it a few drops of poison collected from the most poisonous of their serpents. This fact is quite worthy of attention, as the physiological action of curare greatly resembles that caused by the bites of snakes.

Curare is a solid substance, of a black colour, resinous appearance, and soluble in water.

It resembles the poison of the viper in that it can be swallowed with impunity, but when introduced into a wound under the skin, its absorption is uniformly and rapidly fatal. This was proved by very many experiments.

When injected into the blood-vessels in the form of even a weak aqueous

solution, it proved instantly fatal. No cry or convulsion occurred. The same result happened more slowly, when the solid curare or its solution was introduced under the skin, with some striking peculiarities. If birds were operated on, they flew about for a few seconds, apparently unaffected, but then dropped dead. Dogs and rabbits appeared after a few moments to be tired; they laid down as if asleep and soon expired, without any cry or indication of the presence of pain.

On dissection, every appearance showed the complete destruction of the powers of the nervous system. Mechanical or chemical agents caused no reflex movements. The nerves indeed were as inert as if death had happened many hours previous. The blood is black and coagulates with extreme difficulty. It does not redden by exposure to the air.

To show the innocuous operation of curare on the stomach, they performed this striking experiment. They mixed the poison with the food of the animal, and it appeared to be unaffected. No indication of poisonous effects could be perceived. But when an opening was made into the stomach, and the gastric juice thus tainted was obtained, a small quantity introduced under the skin of an animal caused instant death, with the same result as when the pure poison had been applied.

It is evident, in the opinion of the reporters, that these facts prove a want of absorption of the poison by the gastro-intestinal mucous membrane. Still further, a solution of this poison was injected into the bladder of a dog, and was retained during six or eight hours without injury, and yet the urine then discharged, produced, on insertion into a wound, all the ordinary poisonous effects of the curare.

Messrs. Pelouse and Bernard promise hereafter a chemical examination of this substance.—*Comptes Rendus*, October 14, 1850. T. R. B.

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66. *A Case of Abortion brought on by Savin, and followed by Perforation of the Stomach, and Death.* Communicated by James H. Salisbury, M. D., of Albany, to T. R. Beck, M. D.—A lady by the name of Miss ——— came into Albany at 3 o'clock on Wednesday morning, July 24th, 1850, on the western train of cars, and stopped at the Delavan House. She entered her name on the register ——, and took a room on the lower floor. About 9 o'clock A. M. the same day, she requested a room on the second floor, where she would not be so much disturbed by the noise from the street. At the same time she stated that she wished to remain a few days. Her countenance was pale and careworn—like one sick and troubled Room 44 on the second floor was given her.

On Wednesday afternoon about four o'clock, she requested one of the waiters to go and get some medicine for her in a two ounce phial, labelled chloroform. She told him to get the medicine that was written on the label of the phial. This was obtained for her, as requested, at Dr. Burton's, near the Delavan House. On the following morning, about 5½ A. M., she rang the bell, and requested the waiter to go to a drug store and get some medicine. She gave him the two-ounce phial, labelled *chloroform*, and told him to get it filled with the medicine written on the label, and also to get a drachm phial of morphine. This the waiter did as requested. No more was heard or seen of her until Friday, 2 P. M., July 26.

At 2 P. M., Friday, July 26th, the key to the door was found on the outside in the hall on the floor, and the door bolted on the inside. On looking through the keyhole, a portion of a lady's wardrobe was observed lying on a chair. The door was immediately burst open by Mr. Clark, assisted by Mr. Colburn.

The body of the deceased lay upon the bed in an easy and natural position, apparently dead. The coroner (Mr. Brower) was immediately called to hold an inquest. Dr. Swinburn was summoned to make a post-mortem. He called on me to assist him.

Autops. cadav. about thirty-three hours after she was last seen alive, and probably about twelve or fourteen hours after death. She was not yet cold. She lay on her back in the bed in an easy and natural position, her left hand lying over the region of the stomach and her right hand lying off to the right

of her at an angle of about 45°. Near her right hand lay two phials, the one containing chloroform, the other morphine.

Her appearance, externally, was normal, except some white froth which had issued and was still issuing from her nose. On removing her from the bed, found her underclothes and the sheets considerably stained with blood in the region of the hips. The blood afterwards was found to have proceeded from the uterus. On laying open the abdomen, found the stomach bearing marks of high inflammation. It was softened and perforated, and its contents emptied into the cavity of the abdomen. There was extensive peritonitis. The perforation was about the size of a fifty cent piece, and was situated in the region of the greater curvature, near the cardiac orifice. For several inches around the perforation, the stomach was very much corroded, thinned, and softened, so that it was easily torn. Œsophagus in a state which indicated high inflammation. Small intestines very much inflamed for about four feet from the stomach, the remaining portion comparatively healthy. The colon and rectum blackened and inflamed in the vicinity of scybala, which were found to the amount of about a pint scattered through their whole length. These were carefully removed and preserved, together with the intestines, stomach, and œsophagus, for chemical examination. Uterus was found enlarged. It had the appearance of a recently evacuated gravid uterus of from three to four months gone. Empty, except about two ounces of lochial discharge or secretion. Mouth of uterus relaxed and open, so as to admit easily the finger. Vulva and vagina loose and flabby. Judging from the state of the parts, I should think the fœtus had been discharged from two to three days.

She appeared to be about twenty-seven years of age, of a moderately full habit, and possessing naturally a strong constitution.

Chemical Examination.—The stomach, intestines, and their contents, with about one quart of matter vomited up in the chamber, consisting mostly of tea and coffee, and the several bottles containing medicine found in her possession were delivered to me for chemical examination. This examination was immediately commenced. From the corroded appearance and perforation of the stomach, the presence of some corrosive mineral poison was suspected. After subjecting the stomach and intestines, the scybala, the contents of the chamber, and what matter had been emptied from the stomach into the cavity of the abdomen, separately to a rigid chemical examination, for all of those mineral poisons which would be likely to produce such a state of things in the stomach, without finding the slightest evidence of any of them, I commenced the search of each part separately for the several vegetable substances of an irritating nature, used as emmenagogues. The first substance tested for was savin. Slight evidence of its presence was found in the stomach and intestines, still greater evidence of its presence in the matter vomited and that taken from the abdominal cavity, and conclusive evidence of its presence in the scybala, or hardened feces. The examination of the aforesaid parts of the body here ended.

Attention was next directed to the contents of the several phials found in her possession. The only one suspected to contain savin was examined. There was about half a drachm in the phial. It was made up of a mixture of oil of savin and tinct. of lavender. No other body was found in any of the phials which would be at all likely to irritate and perforate the stomach. Here the examination for poisons ended. Of the drachm of morphine which she obtained Thursday morning, only thirty grains were left. Of the two ounces of chloroform, only about one half ounce remained. So that from Thursday morning to the time of her death, which probably occurred Thursday night, she swallowed or otherwise disposed of thirty grains of morphine and one and a half ounces of chloroform.

From papers in her trunk, she appeared to be unmarried. The state she was in showed conclusively that she had been pregnant, and between three and four months gone; from the chemical examination, that savin had been administered; from the circumstances of the case, that it had been given or taken to produce an abortion; from the post mortem, that a violent gastritis had been excited, which resulted in abortion, softening and perforation of the stomach, peritonitis and death.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Wills' Hospital—Service of Dr. ISAAC HAYS—*Cases discharged from Oct. 1st, 1850, to Jan. 1st, 1851.*

	Cured.	Relieved.	Incurable.
Acute conjunctivitis,	1	0	0
Chronic conjunctivitis,	3	4	0
Granular conjunctivitis,	5	4	0
Corneitis,	2	0	0
Iritis,	1	0	0
Scrofulous ophthalmia,	3	0	0
Phlyctenular ophthalmia,	2	0	0
Ulcer of the cornea,	3	0	0
Wound of the cornea,	2	0	0
Opacity of the cornea,	1	0	0
Vascularity of the cornea,	1	0	0
Cataract,	2	0	0
Amaurosis,	0	1	1
Staphyloma corneæ,	1	0	0
Irritable retina,	0	1	0
Injury of the eye,	1	1	0
Coxalgia,	2	0	0
	30	11	1

Wills' Hospital Dispensary—cases treated:—

Acute conjunctivitis,	9	Purulent conjunctivitis,	5
Chronic conjunctivitis,	12	Scrofulous ophthalmia,	14
Catarrhal conjunctivitis,	4	Pustular ophthalmia,	5
Granular conjunctivitis,	5	Ophthalmia tarsi,	13
Rheumatic ophthalmia,	2	Amaurosis (partial),	4
Iritis,	1	Inflammation of lach. sac,	1
Ulcer of the cornea,	3	Tumour of the lid,	3
Opacity of the cornea,	3	Injury of the eye,	3
Particles of steel in the cornea,	5	Wound of the cornea,	2
Total,			94

Staphyloma Corneæ.—Henry J., æt. seventeen, a native of Va., having good general health, was admitted, October 23d, for the relief of a deformity caused by a staphyloma corneæ. When nine years of age, he received an injury of the left eye with a pair of scissors, the blades of which were thrust through the cornea. Since the accident occurred, he has had no vision in the injured eye. Soon after the time of the injury, the cornea began gradually to become prominent, and the protrusion continued to increase, until ten months previous to the date of his admission; when three knob-like prominences made their appearance near the margin of the cornea, and the whole globe began

to enlarge. When admitted, the cornea was quite opaque and very prominent, and the three knob-like elevations were about the size of large peas. The whole globe was enlarged to such an extent as to prevent the complete closure of the lids without great difficulty. From the time of receiving the injury he has suffered little or no pain in the diseased eye, and the sympathetic irritation of the sound eye had been but slight. Oct. 30th, Dr. Hays, in the presence of his colleagues and Dr. Wm. Ashmead, removed the whole of the cornea, making first an incision of the lower half with a Beer's cornea knife, and completing the entire section with curved scissors. The contents of the globe immediately escaped, and a very profuse hemorrhage followed, which continued for over two hours, and then ceased upon the formation of a large coagulum between the lids and the incised margins of the cornea. This coagulum was suffered to remain until it came away spontaneously, on the sixth day after the operation. On the second and on the fourth days there was a recurrence of considerable hemorrhage—the whole amount of blood lost was about ℥xvj. Soon after the operation, the eye became greatly distended and extremely painful. For five days the patient's sufferings were intense, and several times he exhibited some premonitory symptoms of tetanus. When, on the fifth day, suppuration was fully established, the pain became less, and gradually subsided with the subsidence of the distension of the globe. On the tenth day the patient was permitted to sit up, having then but little pain. On the fourteenth, he could close the lids over the eye, and on the twenty-ninth he left the hospital, the globe having been diminished to four-fifths its natural size and entirely free from inflammation. Since leaving the hospital, he has had two slight attacks of irritation in the right eye.

Cod-Liver Oil.—This remedy was employed in the constitutional treatment of all the various forms of scrofulous ophthalmia, and the results were such as fully to sustain the great confidence which Dr. Hays has in its efficacy, a confidence which, he remarked, had been gained from the use of the cod-liver oil in a large number of cases in both public and private practice for the last three years. The oil was also found of especial value in all cases which, under ordinary treatment, have a tendency to frequent relapses; in these cases, its use alone was found sufficient to effect a cure, unaided by local applications. This was most evidently manifested in the case of a sailor, æt. 25, who came into the hospital in March last, and for the last three years has been the subject of a most intractable conjunctivitis. Up to the 1st of November last, the usual modes of treatment were diligently employed without any amendment; indeed, he was much worse in October than he had been at any time since he came into the hospital. From the time of his admission up to the 1st of November, he had several very severe relapses, in the last of which he had an ulceration of the cornea, which perforated and allowed the escape of the aqueous humour. It was while suffering the most in this relapse that he was ordered the cod-liver oil, with an entire discontinuance of all other remedial means. At that time the vascularity of the cornea was such as entirely to obscure vision—lachrymation was profuse, and photophobia intense; his improvement from that time to this (January 24, 1851) has been rapid and permanent. He can now see to read; he can also bear the light of noonday without lachrymation or inconvenience of any kind, and the great vascularity of the cornea has almost entirely subsided. Many other instances, illustrative of the statements above made, might be cited from the present service of Dr. Hays, did the space designed to be occupied by this report permit.

A. F. MACINTYRE, M. D., *Resident Physician.*

Wills Hospital, *Jan.* 1851.

On the Importance of establishing a Lectureship on Dental Surgery in Medical Colleges. By E. B. Gardette.

The writer, a practicing dentist of Philadelphia, begs leave respectfully to call the attention of the trustees and medical faculties of the medical schools of the United States to the propriety and advantages of establishing an adjunct professorship to the chair of surgery, in which the specialty of dental surgery may be taught to the medical student seeking knowledge in your institutions.

In making this suggestion, he indulges the confident belief that the existence of such a chair would be no less useful to those who may be compelled to practice some branch of dental surgery, as part of their duties in general surgery, than to the smaller number who may determine to embrace that specialty as their profession.

The writer would offer for your consideration some reflections that seem to render this proposal consistent, not only with the wants of the student of medicine and the public, but with the duty and the interests of the medical schools which may act upon this request in such form as seems most proper to their own judgment.

It will scarcely be assumed by any trustee, and still less by any member of a medical faculty, that the profession of the dentist or its duties, are less important to mankind than any other of the specialties of surgery—whether the oculist, the aurist, or the lithotomist; and therefore it is needless to consider such a question open for debate, or requiring argument in a country, especially, where the services of good dentists have been so widely and universally needed. It being granted, then, that the science itself is of equal importance with the other departments of surgery, it is an undeniable truth that, whilst all other specialties are taught and included in the professorships of medical schools generally, the principles and practice of dental surgery have received no attention, or certainly none that would permit the graduate of medicine to feel that he was qualified for the simplest duty of the dentist.

Such a state of things was perhaps an unavoidable evil when men could not be found who were competent to teach the principles of our science, and when there was need of a comparatively small number of dentists; and hence no such aid was then called for from the medical colleges: but at this time there would seem to be required about twenty-five hundred dentists, more or less, throughout the United States, which is sufficiently proved by the fact that about that number are believed to be engaged in the practice of the profession, after some fashion or other—good, bad, and indifferent; and to supply an increasing demand for well-educated dental surgeons, as well as to raise the standard of that profession, would appear to be a matter of common interest.

Within a few years, two or three colleges of dental surgery have been established in this country under the sanction of charters from the States in which they are located; and without examining into their history or their influence upon the profession of the dentist, it is a source of regret that they must be regarded as the offspring of your neglect, and their very existence a reproach upon medical institutions for their unjust and exclusive course towards the science of dental surgery. It would seem an act of inexplicable unkindness to have thus singled out the profession of dentist from among the specialties of surgery, and forced it into an attitude of independent self-protection; but a gentleman who fulfils the duties of both medical practitioner and dentist with such distinguished abilities as to be an honour to both professions, has traced truthfully the origin of the neglect of which the dentist complains. The undersigned quotes from a valedictory address to the graduating class of Baltimore College of Dental Surgery, March 1850, when speaking of the early periods of the existence of a medical faculty:—

"They condemned, without stint, a calling they knew not how to practice, and a practice they knew not how to improve. Such of the faculty as were learned in their profession were found always competent and fully prepared to be oculists, aurists, or lithotomists, or to devote themselves to any other branch of the profession which their interest, inclination, or talents might determine, *except* that of dental surgery. This branch seemed to require something more than medical knowledge; it required great mechanical skill—an education of

the hand as well as of the head—a kind of education they had not received and knew not where to acquire, and yet affected to despise. The necessities of the community cried aloud to them for help—a help which they could not bestow. This drove many sufferers to seek dental aid out of the medical profession, and to obtain that help which mechanical genius alone could supply. At this the profession seemed mortified and chagrined, and loudly mocked at those who dared to supply their delinquencies, and united as one man in deriding the uneducated dental mechanic. They first created the necessity for an empiric, and then croaked forth their withering contempt on the creature their own ignorance had made."

Thus has dental surgery been left to struggle through endless impediments and difficulties, instead of being regarded as a link, however humble, in the great chain of medical science, which should with patriarchal strength and harmony foster and embrace every branch of the healing art.

It is now believed that, among the number of medical students who attend each of the schools, there are many who would gladly devote themselves to the specialty of dental surgery, and it is from among these, and at the early age at which they generally devote themselves to medical studies, that good dentists could be formed; they should still be required to earn and receive a diploma with the title of M. D., as a guarantee of fitness to practice and a claim to confidence as dentists. Even among the number that annually graduate, either to practice medicine generally, or limiting their attendance to their own families and dependents at the South, a correct knowledge of the theory and practice of dental surgery, such as might be derived from a course of lectures, would be highly valuable. And it is believed there would not only be a direct increase of good dentists, but a desirable addition to the number of those who should be competent to determine what constitutes a good dentist.

The establishment of separate schools for each specialty in medical science (and why should there not be for the oculist, or the aurist, as well as the dentist?) would appear to be the dismembering of a great family, thereby lessening its influence for good, as well as that power which is justly derived from an *esprit de corps* subsisting in every branch of an elevated and honourable profession.* In this expression of opinion as to the ultimate tendency of dental colleges, the undersigned is actuated by no unkind or invidious feelings, but, on the contrary, he gives them due credit for the efforts they have made and are making to improve the profession; and to the Baltimore College of Dental Surgery he is personally grateful for acts of courtesy and kindness towards himself, and to the memory of his father.

The educated dentists in the various parts of the United States are abundantly numerous, it is believed, to fulfil such duties as might be assigned them in each of our medical colleges. The students who now attend the dental schools would in this event be added to the number of matriculants in the medical classes of the country, and the need of separate institutions would cease.

Frequent occasion for consultations between the physician, the surgeon, and the dentist, has been felt by almost every practitioner of medicine, as a necessary consequence of the connection and sympathy reciprocally existing between the teeth and many serious disturbances of the general health: such sympathies would naturally seem to suggest the mutual dependence between the physician, the surgeon, and the dentist, and should be a good reason for some similarity and sympathy in their modes of education. The benefits from such a state of things as the mind can readily anticipate would not rest here; medical men would sometimes, no doubt, receive important aid from the dentist, in tracing to their true origin many diseases of the head and face that now baffle their skill.

Whatever action your medical faculty or board of trustees may see fit to take in reference to these suggestions, and the object they are designed to promote, the undersigned may at least respectfully urge that they would seem to demand fair and kindly consideration, as involving matters of deep concern to the community, for whose safety and advantage all medical learning is sought, and medical colleges instituted and fostered.

DOMESTIC SUMMARY.

Femoral Aneurism cured by Compression.—Dr. W. H. Church records, in the *New York Journ. of Med.* for March last, a case of aneurism of the right femoral artery successfully treated by Dr. John Watson by compression.

The patient was a man thirty years of age, who was admitted into the New York Hospital with a pulsatory tumour which he first noticed three years previously, and which has been steadily increasing since. When admitted into the hospital, his condition was as follows:—

"The tumour is tense, but elastic to the touch, in fact presenting all the characteristic signs of femoral aneurism, but unusually well marked. It is situated on the anterior and inner part of the ham, its upper edge being three inches below Poupart's ligament, probably just below the giving off of the profunda branch of the femoral artery; it is slightly oblong, extending down the course of the artery six inches, that being its greatest length.

"*Jan. 19th.* The leg being bandaged from the toes up to the knee, pressure was commenced at a quarter past one, P. M., with Dr. Hosack's instrument, by which the counter-pressure is made over the trochanter and the outer condyle of the os femoris. When the instrument was first adjusted, and pressure made over Poupart's ligament sufficient to stop the pulsation in the tumour, patient most confidently said he could bear it for four weeks. At two P. M., pulsation was felt in the tumour, and he complained of some pain. Another pad was applied two inches below, and the pressure of the other slackened, though retained in the same position. Four o'clock, full pulsation, and patient suffering severe pain; pad changed, and tinct. opii gtt. xl administered. During the afternoon patient suffered very severe pain, the pressure requiring to be changed very frequently. At six P. M., tinct. opii gtt. xxx was ordered. At eight o'clock he complained of excessive pain passing down the thigh to the knee-joint; tincture of aconite was painted over it and about the pads, which he said gave him relief. It was found impossible to control the circulation sufficiently by the lower pad of this instrument, and therefore Signorini's artery compressor was substituted, one pad being placed upon the plate of the former instrument and the other over the artery. Sol. sulph. morphiæ (Magendie's) gtt. xx.

"At 9 o'clock the pain was so severe that sulphuric ether was administered, which relieved the pain for an hour; and he appeared to be more under the influence of the opiates after the anæsthetic influence had passed away. The senior assistant remained with him during the night, and at one A. M. of the 20th felt pulsation in the tumour for the last time, when he adjusted the pad, so that its pressure was borne very well until 5 A. M.

"*20th,* 10 A. M. Blood could be *heard* passing through the tumour, but no pulsation heard. Signorini's compressor was again adjusted, and remained undisturbed until half-past four in the afternoon, when the pressure was slightly moderated.

"*21st.* Compression has been continued during the last night, though less firmly than at first, and entirely at the lower point. At midnight sol. sulph. morph. gtt. xx was again administered, and about three o'clock this morning patient fell asleep, and slept more than an hour. There is no pulsation to be felt either in the tumour or in the posterior tibial artery. The temperature of the limb is a very little lower than of that of the opposite side. Patient feels very much less pain, and pressure is borne for several hours with but little complaint.

"*22d.* Patient slept during the greater portion of the last night, and to-day complains of but little pain. The size of the tumour is somewhat diminished, and feels much softer than yesterday. The limb is not at all swollen, and its temperature is about the same as that of the other side.

"*25th.* Since the last date, very moderate pressure has been continued, change of position of the pad not being required oftener than once in twelve hours, and to-day the compressor is entirely removed. A thick compress of lint is applied over the artery, and firmly secured in its position by a single spica bandage. No pulsation can be detected in any part of the limb, though the

surface is now of a higher temperature than that of the left side. The tumour is gradually diminishing in size.

"28*th*. All compression is to-day discontinued, the bandage removed from the leg, and the patient allowed to sit up, the limb being elevated, and resting upon a pillow. He speaks of slight numbness about the knee, but has no pain whatever in the limb.

"*Feb. 1st*. No pulsation can yet be felt in the popliteal or posterior tibial arteries, though the limb is fully as warm as the other. Patient sits in a chair during the whole day, and sleeps perfectly well at night, without the aid of an anodyne. The tumour continues to diminish, and is now not more than half as large as before treatment was commenced. It is also becoming more firm.

"6*th*. Patient being very anxious to return home, permission to do so is given. Pulsation in the posterior tibial artery has not returned."

Coup de Soleil, or Sun Stroke. By FREDERICK D. LENTE, M. D., Resident Surgeon at the New York Hospital.

In "A Summary of the Transactions of the Coll. of Phys. of Phila.," published in the last number of the *Amer. Journ. of Med. Sciences*, are some remarks by Dr. Pepper, one of the physicians of the Pennsylvania Hospital, on the above disease. "He considered it a remarkable circumstance that this affection has received so little attention from medical writers." "In consulting the standard authorities, we find but little said in reference to it, and that little generally vague and unsatisfactory." This fact is, in our opinion, easily accounted for. The disease seldom occurs except in crowded communities, as in large cities; and in these, only among a particular class, the common labourers, who earn their daily bread by their daily work, and are consequently compelled usually to labour during the intensest heat of the day, when the thermometer, in the shade, ranges from 96° to 100°, and over, with not only the direct rays of the sun playing full upon them, but also the reflected rays from the pavements and buildings. Added to this, as the efficient and exciting cause, we have fatigue, intemperance, and often insufficient or improper food as predisposing agencies; these causes do not usually exist in the country, and in small communities, where, if labour is performed in the heat of the day, and under exposure to the sun, it is with a supply of fresh, wholesome air, with none of the other predisposing causes; the powers of the constitution will, under such circumstances, generally resist its baneful influence. The members of this class, when an accident befals them, are almost always conveyed immediately to the hospital; and therefore it is rather rare for a private physician to be called to treat a single case of coup de soleil, and of course nothing can be furnished by him on the subject in the way of practical experience. When brought to the hospital, it is generally at an hour when the attending physician is absent, and the case usually lies before his next visit, or is so far recovered as not to call for his particular notice, so that he knows but little personally of the phenomena of the disease. It is thus only seen by the resident physician, who, in the discharge of his multitudinous duties, takes no particular note of the symptoms or history of the case, but sees the patient die in a few hours, perhaps in a few minutes, after his admission, and thinks no more of it.

Private physicians are sometimes called suddenly, in the heat of the summer, to a man who has "fallen down in a fit, while at work," and regarding the case as one of apoplexy, he pulls out his lancet, bleeds him, and sends him to the hospital. This is almost universally the practice. Dr. Pepper says, of twenty hospital patients, *all* had been bled previous to admission. This fact is, of itself, a strong indication that some knowledge of the pathology of the disease is much needed in the medical community; for it is well known to those who have had much experience in this disease, that venesection, if it succeeds, is almost certain death.

In this city the disease is quite common in the months of July and August, commencing sometimes as early as the middle of June, and ending as late as the first week in September. In the summer of 1847, if I remember rightly, there were thirty-seven cases in four days. Most of them died so promptly that there was not time to convey them to the hospital, the coroner being usually

the only physician who saw them. Not only were men affected, but animals, omnibus horses especially, it being quite common to see them fall, and die in the street. During the last five years, according to our records, *forty-two* cases were admitted into the hospital. Of these, *twenty-four* died, and *eighteen* survived. Fourteen occurred in the month of August, twelve in July, twelve in June, and four in September.

The prognosis in this disease, as in cholera, depends almost entirely upon the stage in which the disease is seen. If in the stage of collapse, the case is almost hopeless. So that one physician might have ten cases, and all might recover; another might have the same number, and the treatment be equally judicious, yet nine out of the ten might die.

Nearly half of the cases that have been brought to this hospital, as far as my own experience extends, have been in the stage of collapse or bordering upon it. They were usually brought in late in the afternoon, and, of course, some hours after the inception of the attack. They have then been comatose, with cold surface, except that of the head, which is often very hot, feeble, frequent, and fluttering pulse, scarcely perceptible at the wrist, dilated and inactive pupils, respiration laboured, sometimes stertorous. Sometimes they have lain perfectly motionless and paralyzed, sometimes restless, sometimes in convulsions. Often, when in this state, under the application of a powerful stimulus to the surface, as burning alcohol to the legs, a patient has sprung up in bed, stared at those around him for a moment, asked for a drink, taken it, and then fallen back again into his former condition. In a less advanced or less severe stage of the disease, the patient has presented pretty much the same symptoms, but in a less marked degree. The pulse is frequent, but not so feeble and irregular; the pupils act feebly; the surface is cool, the head perhaps burning hot; patient is perhaps in a state of partial coma, from which he can be aroused, however, by addressing him by name in a loud tone. The respiration is quick and laboured, but not stertorous; sometimes he has convulsions, quasi epileptic; sometimes he is extremely restless, requiring to be held in bed. In a still earlier or less severe stage, the patient is perhaps able to walk with assistance; complains of intense pain in the head, which is usually hot. The extremities are cool; pulse not much altered, not hard or bounding. No infection of eyes; pupils rather dilated, if altered at all.

Perhaps one or two cases by way of illustration, and briefly stated, would not be amiss here.

C. 1st. A man, name unknown, about forty years of age, was brought to the hospital about noon, July 27th, 1848, and admitted under Dr. H. D. Bulkley. He had fallen in the street a short time previous to admission. Was in a state of complete coma, with laboured and irregular respiration, quick and fluttering pulse, head hot, pupils immovably dilated.

Treatment.—Sinapisms to feet, legs, and stomach. Ice to head, and stimulants. He survived but a few hours.

Autopsy, eighteen hours after death.—*Brain* normal. *Lungs* slightly congested—crepitant. Other internal organs healthy.

C. 2d. Michael Collyer, native of Ireland, labourer, was admitted under Dr. Griscom, Aug. 11th, 1848, in a state of insensibility, having fallen down in the street. Respiration stertorous, pupils dilated, pulse quick, feeble, and irregular.

Treatment.—Turpentine enema. Sinapisms to chest and limbs—stimulants freely. Patient survived for a short time.

Autopsy, eighteen hours after death.—*Brain* slightly congested; lungs emphysematous at some points; other organs healthy.

In these cases, as has been seen, there was no marked congestion of the internal organs. In nearly all the cases that occurred in 1850, there was well-marked congestion of these organs; sometimes of the lungs, sometimes of the brain. Thus, out of *eight* cases recorded in our books, there was congestion of the lungs in *two*, and of the brain in four. In one of the remaining two, there was apoplexy, and this man was bled in the hospital, being the only case out of the forty-two in which the lancet was considered admissible; the case proved fatal.

In the remaining case, there were well-marked epileptic convulsions; this

case terminated favourably. The congestion of the brain in two of the four cases was inferred from the symptoms as the cases recovered. In the others, it was revealed by a post-mortem inspection. In no case was *inflammation* of the brain or its membranes observed; and in all the cases the same course of treatment was pursued, with the above-mentioned exception. Cups were applied to the temples in the cases suffering from head symptoms, such as heat, dilated pupils, stertorous breathing, pain; but external and internal stimulation of the most active kind was indicated in all, except perhaps in those admitted in the first degree or stage of the disease. Sometimes the patient was placed in the warm bath, and, at the same time, the cold douche was applied to the head; this usually seemed to have some effect, though but temporary. In the cases which showed congestion of the brain, at the autopsy, the symptoms were still such as to require prompt stimulation, the only difference in the treatment being the local abstraction of the blood from the temples, and the application of ice to the head. I know of one case in private practice, in the year 1847, which occurred in a high liver, of apoplectic build, and showed marked symptoms of apoplexy. The attack yielded with some difficulty to large bleedings.

Insolation is almost uniformly nervous exhaustion, and is to be treated as such. We are not to bleed because the patient is a robust man, and has fallen in a fit at his work, which seems to be the only circumstance taken into consideration usually by the physician who is hurriedly summoned to such a case. The pulse is always a sure guide.

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Case of Cæsarian Section. By H. M. Jeter, M. D. [We transcribe from the *Southern Med. and Surg. Journ.* (March, 1851) the following most extraordinary case:—]

On the night of the 4th of December last, Mrs. B., aged thirty years, was taken in labour with her sixth child. I was called at 3 o'clock in the morning to attend her accouchement. I found her with weak and irregular pains, and was informed that such had been their character from the commencement of labour at 9 o'clock. Soon after, however, her pains began to increase, and upon examination per vaginam, I found the os tincæ well dilated and the waters collected in large quantity. The back of the fœtus presented; I waited until the mouth of the uterus was more completely dilated, and ruptured the membranes, discharging an immense quantity of water. I proceeded immediately to turn, so far as to bring down the breech, making a breech presentation. The difficulty attending the operation of turning was so great, in consequence of the extraordinary size of the child, (it being very large,) that I regarded it hazardous to attempt to complete the operation, and left it in this situation to the natural efforts of the womb. After about two hours of very hard labour the breech so far advanced as to enable me to bring down the feet. I essayed by every possible means to assist the efforts of the uterus, by making all the traction upon the inferior extremities of the fœtus that was warrantable, being convinced that the fœtus was dead.

Finding all efforts to make any further advance in its delivery entirely fruitless, I attempted to perforate the cranium, but found it impossible, in consequence of the size of the child, to pass the perforator up to its head. I then eviscerated the fœtus, with the view of passing the instrument up within the cavity of the fœtal thorax to the base of its cranium. This also failed to make room for the operation, without proceeding at random and great consequent hazard to the mother, as I could not insert the hand to give any certain direction to the instrument, the head still being entirely above the superior strait. Embryotomy was therefore determined upon, and after dissecting away the fœtus up to its axillæ, which required about two hours, the mother all the while suffering the most severe labour, but which at this time had ceased to make any impression upon the child, and which induced me to conclude that the uterus had probably ruptured, I found her rapidly sinking, so much so, indeed, that we did not think that she could survive fifteen minutes longer. I determined at once to operate on the Cæsarian section. I gave my patient a stimulant, and, assisted by Dr. Reese, proceeded to make an incision along the linea alba, six inches in length, cutting down carefully to the peritoneum, upon dividing

which, the head of the fœtus presented, showing that my apprehensions were correct in the womb's having ruptured some time previous to the operation. The head of the child was so large that the incision had to be extended to ten inches in length to admit its passage. The head measured twenty-nine inches and four lines in its longitudinal or occipito-frontal circumference, and twenty-eight inches two lines in its perpendicular circumference, being hydrocephalic. The head and remaining portion of the body being removed, the placenta was found also without the uterus within the cavity of the abdomen, and the uterus contracted to about the size of a small cocoa-nut. This being also removed, the cavity of the abdomen was left filled with coagulated blood, from the hemorrhage which took place at the time of the rupture of the womb. Having carefully removed the blood as completely as possible, the wound was closed by the interrupted suture and adhesive straps, leaving a space of about two inches at its inferior extremity, for the discharge of the fluids that might remain or collect in the cavity of the abdomen.

Stimulants were given, and other applications made, to revive the sinking energies of the patient, which had become almost extinct. Reaction soon took place, and she was cleansed and placed in as comfortable a position as the circumstances would admit. The vital energies having been sufficiently resuscitated, opiates were given freely. She was kept quiet, and rested comfortably during the night and the following day, until about 9 o'clock on the succeeding night, (the 6th,) when she was taken with violent vomiting, which continued, with intermissions of not more than half an hour, until 10 o'clock the next day, at which time I arrived, having been called off the evening before, and could not return sooner.

We succeeded in soon checking the vomiting, and she rested easy, with occasional return of the vomiting during the day and following night.

Dec. 8th. Patient complains of some soreness about the womb, and over the abdomen generally, which is considerably swollen; pulse 132, and very restless. Administered a clyster, which produced two evacuations; gave her to drink small quantities of cream of tartar and lemonade.

9th. Patient complains of great soreness and tenderness of the abdomen, which is greatly swollen; tongue dry and red, and great thirst; pulse 140, quick and hard; lochial discharges ceased. Put her upon a treatment of calomel and opium; gave injections of warm milk and water per vaginam, and applied flannel, wet with spts. turpentine, to the abdomen.

10th. Soreness and tenderness not so great; discharges from the wound in the abdomen free; lochial discharges also free; pulse 136. Gave clyster, which produced one evacuation.

11th. Soreness and swelling still subsiding; pulse 130, more soft and full; lochial discharges and those from the wound in the abdomen continue freely. Gave small quantities of Dover's powder.

12th. Had one copious alvine discharge during the night, of natural consistence—says she feels much relieved since. The discharges all continue free; pulse 130; wound healing kindly. From this time, nothing of importance occurred to require noting. She continued to improve, and by the 18th day after the operation the wound was entirely healed.

I visited her yesterday for the last time, which was the 29th day since the operation, and found her sitting up by the fire, directing the domestic affairs of her family. Mrs. B. is a woman of apparently very feeble constitution, and had been confined to her bed, for two months previous to her labour, with general anasarca of the whole system.

On the Law governing the Distribution of the Striped and Unstriped Muscular Fibre.—Dr. H. F. Campbell, Demonstrator of Anatomy in the Med. Col. of Georgia, offers some interesting observations on this subject in the *Southern Med. and Surg. Journ.* (March, 1851), and enumerates the following case as governing the distribution of striped and unstriped muscular fibre:—

"*Wherever celerity and quickness of action* is required in a muscle, *under any circumstances*, we find the *striped fibre* entering into its composition, *without any regard whatever* to *voluntary* or *involuntary motion*; and, further, that the vol-

untary or involuntary character of the muscle has no influence at all on the distribution of these two kinds of fibre. In the establishment of this view, we find arguments abundant throughout the whole muscular system. All the muscles of voluntary motion, it is true, are constituted of the striped fibre; for these are liable, at any time, to be called upon for the most rapid and energetic contraction. On the other hand, the involuntary muscles are found of an unstriped fibre, with the above-mentioned exceptions; but these exceptions we think sufficiently important to invalidate materially the law which refers this distribution to voluntary and involuntary function. In offering the suggestion above made, we have in view the substitution of it as a law which can be of universal application, for one which is embarrassed by exceptions, which this readily, and, to our mind, satisfactorily reconciles."

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Prof. J. E. Cooke's Antilithic Paste.—℞. Castile soap ℥iv; spermaceti ℥viij; Ven. turpentine ℥vj; oil aniseed ℥iij; turmeric ℥ij; honey, q. s. Rub the soap and spermaceti well together, then add the turmeric; after rubbing them well, add the turpentine and oil of aniseed, and sweeten with honey.

Of this paste, a piece the size of a nutmeg is given two or three times a day. The diseases in which it is most useful are those in which the mucous membrane is involved. There is a species of hoarseness which follows inflammatory action, and which often approaches aphonia, in which the paste is a valuable remedy. As a diuretic, it is highly extolled.—*West. Journ. Med. and Surg.*, Jan. 1851.

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The Difficulty of Breathing from an Overdose of Opium relieved by Inhaling the Vapour of Water.—The difficulty of breathing, commonly met with in cases of poisoning with opium, is generally ascribed to paralysis of the respiratory muscles caused by the drug; but Dr. C. W. Wright ascribes it (*Western Lancet*, Jan. 1851) to the dryness of the mucous membrane of the lungs, caused by the opium.

"It is absolutely necessary," he remarks, "that the mucous membrane of the lungs should be kept constantly moist, otherwise it is impossible for oxygen gas to be absorbed, and carbonic acid eliminated. It is observed, in some cases of poisoning with opium, that the mouth and fauces become so dry that it is almost impossible for the patient to swallow or speak, and that if the dose is sufficiently large, this dryness may extend into the respiratory organs, and thus give rise to great difficulty of breathing. In these cases the patient is not so much disposed to sleep as when this symptom is not observed.

"Having seen this effect of opium in several cases, I had determined to try the effect of the inhalation of the vapour of water in mitigating the unpleasant symptoms thus induced. This I was enabled to do in my own case, a short time since, from having taken by mistake an overdose of opium, which could not have been less than ten grains. In this instance, the first warning of the mistake I had committed was embarrassed respiration, which soon amounted to an agony, without the least symptom of narcotism. In this case much the same sensation was produced by each inspiration as is experienced by the inhalation of pure nitrogen gas, the air seeming to leave the lungs without having performed its functions, there being at the same time a sense of dryness in the fauces and larynx. In this condition I commenced breathing the vapour of hot water, which produced immediate relief. After this, having ejected the poison from the stomach by an emetic, no unpleasant effect followed.

"When it is remembered that the power which a membrane possesses of absorbing a gas is in proportion to its moisture, and that a dry one is as impenetrable to gases as horn, it is not surprising that the above symptoms should be induced by opium, which, above all other substances, has the property of diminishing the secretion of the mucous membranes. It should also be borne in mind that, by arresting the pulmonary secretion, the blood loses its attraction for the mucous membrane lining the lungs.*

"Probably the best treatment which could be adopted, where this symptom is

* See Liebig's late work on the motion of the juices in the animal body.

observed, would be to allow the patient to inhale the nitrous oxide gas saturated with vapour, which would have the effect of restoring the moisture of the lungs, and presenting oxygen in a much more soluble form than that which enters into the composition of the atmosphere.

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Refracture of a Leg to Improve Defective Surgery.—Prof. Mussey, of Cincinnati, records, in the *Lancet* (Jan. 1851), a case of this occurring in a female who was thrown from a buggy and had both bones of the left leg broken in two places; one three and a half inches below the knee, the other two and a half inches above the ankle.

It was six weeks before the patient began to sit up in bed, and four months before she was able to ride out. She came to Cincinnati in July of the same year. Ever since the injury, the leg had been considerably swollen, and there had not been a day without more or less pain, sometimes severe, extending from the upper fracture to the heel, back of the foot and toes, indicating lesion or compression of the fibular nerves.

Both fractures were firmly consolidated. The lower fracture was well enough, exhibiting no deformity—at the upper one, the leg was sadly bent, exhibiting a prominent external convexity or angle, so great as to shorten the distance from the knee to the inside of the foot about an inch and a half: the plantar surface of the foot looking inward, and its outer edge looking directly downward. Of course, the limb was altogether useless in walking; any attempt to apply the foot to the ground aggravating the pain. It was impossible to place the sole of the foot down flat, or bring the heel within an inch of the ground. The limb was therefore left to swing, while Miss K. moved about upon the other leg and a pair of crutches.

In September, 1848, aided by his son, Dr. Wm. H. Mussey, Prof. M. operated in the following manner. A firm pad, an inch and a half thick, was laid upon the inside of the knee, another upon the inside of the ankle, extending five inches up the leg. A splint of hard wood, one inch thick, and three inches wide, was laid, and secured by a bandage, upon these pads. A broad padded belt was placed over the angular projection of the fracture, and gradually tightened by a mechanical power, derived from Jarvis's adjuster, till the fracture was crushed, and the leg straightened.

The patient, having been placed under the influence of chloroform, was wholly unconscious of pain during the operation, and occupied herself all the while in singing sacred songs, and holding celestial conversation; and while a bandage and splint were being applied to maintain the new position of the limb, finding herself coming to earth again, she entreated most earnestly for more chloroform, to prolong the ecstatic illusion. After the operation, the pain in the leg and foot was diminished, and in two months the fracture was consolidated.

Dec. 12. There is now no pain at the heel, and comparatively little in the leg and foot. The limb has its natural direction, is as long, and apparently as strong as the other. She can now walk with a cane, and limpingly without one.

Feb. 1849. The patient now walks very well without crutch or cane, and only now and then feels slight pain in the leg, the nervous injury having been almost repaired. Some months after the above date, the patient was walking well in the street, as if nothing had happened.

—

Aphonia and Obstinate Cough from Prolongation of the Uvula. Dr. T. C. Ready, of Lexington, Mo., records, in *St. Louis Med. and Surg. Journ.*, Jan. and Feb., 1851, the case of a young lady, who had been unable to speak above a whisper for over four years, during which period she suffered from incessant cough, which she said attacked her after exposure to cold. She had consulted many physicians without relief. Upon examination of the fauces, Dr. R. found the uvula enlarged to an enormous size, about one inch in length, hanging over the rima glottidis, and all the adjoining parts inflamed and engorged with blood. "I immediately came to the conclusion," he says, "that the secret of the

aphonia and coughing was an enlargement and prolongation of the uvula, and determined upon excision of the same, which I did, and in ten minutes after the operation, she could speak as loud as any one in the room, and has continued to improve, from day to day, ever since, so much so that she can now sing a tune in as good style as she could before her attack. A slight coarseness of the voice, and inability to execute high notes in singing, is all the difficulty she experiences. It is a curious fact in this case, that out of some half-dozen physicians who had before attended her, not one had ever examined her mouth and throat, and thus overlooked what would most certainly have relieved her years ago."

[In the second number of this Journal (Feb. 1828), the late Dr. PHYSICK related a case of obstinate cough caused by an elongated uvula, and cured by its excision. He also described an instrument devised by him for the operation.

The celebrated Wiseman, in his *Chirurgical Treatise*, published so long ago as 1676, states that a "frequent hawking" and "vexatious catarrh" is often produced by elongation of the uvula; and he relates a case in which he effected a cure by excising a portion of that organ. See book iv., chap. vii., obs. 8.

This condition of the uvula, we are led to believe, is a frequent cause of obstinate cough, and we take this opportunity of inviting anew the attention of practitioners to it.]

—

Two Cases of Mumps, with Metastasis to the Brain, both terminating fatally. Dr. HARVEY LINDSLY records (*The Stethoscope and Virginia Med. Gaz.*, Jan., 1851) the following examples of this rare accident:—

"In January, 1849, a son of Gen. W., who at the time was a student of medicine and attending the lectures of the medical school in this city, was attacked with the mumps, and after a few days' illness died, as I was informed, from metastasis of the disease to the brain. I cannot give the particulars of this case, as the patient was not under my professional care. On the first day of February following, about a week after the death of this young man, I was requested to see his brother, (ætat. 20,) a student of Princeton College, who was at home on a short visit to his friends. I found him labouring under a well-developed attack of mumps of the left side, the gland considerably swollen, and with some fever, though, on the whole, suffering but slightly, and feeling, as he remarked, very comfortable. The disease seemed to be taking its usual course, and, if it had not been for the recent death in the family, would have excited little interest or observation. As it was, however, his friends felt some anxiety, and I was induced to attend the case more carefully than I should have thought necessary under ordinary circumstances. As precautionary measures, I directed pretty active purgatives, followed by diaphoretics, hot pediluvia, warm flannel to the swollen gland, &c., and watched very closely for any indications of disease of the brain. I could detect nothing of the sort, however, and until the fifth day everything seemed to promise a favourable termination. I examined my patient carefully twice a day, with reference to the condition of the testicles as well as the brain. But there was no apparent disturbance of the functions of the one, and no enlargement of the other. He was cheerful, slept naturally, and felt confident of a speedy recovery. Upon examining him, however, on the morning of the fifth day, my apprehensions were excited by finding that he was labouring under *priapism*. I dreaded this symptom the more, as the disease seemed now to be taking the same turn that proved fatal in his brother's case. He was immediately ordered to be leeched freely at the base of the brain; a blister was applied to the nape of the neck, purgatives given, and an active general antiphlogistic treatment adopted. At the same time, additional professional advice was obtained. During the whole of this day, however, the priapism was the only indication we could detect of diseased brain.

On the next morning we were informed that he had been labouring under delirium the greater part of the night—had been restless, and suffered much. These symptoms continued to increase in violence, convulsions came on, and in a few hours death closed the scene on the sixth day of the disease and the second after the appearance of the priapism.

A careful examination of the brain was made thirty hours after death, when

decided marks of inflammation and congestion were found in the cerebellum, but none in the cerebrum.

—

Dislocation of the Radius and Ulna backwards at the Elbow.—Professor Dugas has published (*Southern Med. and Surg. Journ.*, Jan. 1851) some interesting remarks on this accident, and relates briefly the following seven cases of it which have come under his observation:—

Case I. Miss A. E. H., having sustained an injury of the elbow-joint by a fall from a moderate height, had been treated three weeks with discutient lotions and a nearly straight splint, when I was requested to see her. The attending physician, whom I met in consultation, not agreeing with me as to the nature of the accident, a third physician was called in, who differed from us both. The opinion of a fourth was now requested, and he fortunately concurred with me in the conviction that the bones of the forearm were dislocated backwards. The patient was immediately seated in a strong chair, with the injured arm projecting through the back of it. A little tobacco was put into her mouth to promote a relaxation of the muscles, and when nausea supervened, the dislocation was reduced by pulling the forearm strongly, and at the same time bringing it into a state of complete flexion around the vertical bar of the chair. The arm, being placed in a short sling, and occasionally moved, was, in the course of a few weeks, completely restored to its natural uses.

Case II. This case presents nothing peculiar. It was that of a little girl from South Carolina, about seven years of age, who fell from a chair, and dislocated the elbow-joint. She was sent to me a few days after the accident; the nature of the injury was detected, and reduction immediately effected as in the above case, but without the use of tobacco.

Case III. Mr. St. J. (about thirty years of age) was thrown from his horse with great force, a short distance from the city. It was probably two hours after the accident that I saw him. The arm was semi-flexed, and the tumefaction of the elbow-joint immense. Another physician was requested to see him with me, but differed with me as to nature of the injury. The joint was, therefore, covered with cold lotions, and gently splinted until the next day, when I succeeded in convincing my *confrère* that we had to deal with a dislocation of the joint. The reduction was effected by drawing the forearm around the bedpost until flexion was complete. The case terminated successfully.

Case IV. Mr. W., from one of the lower districts of South Carolina, about twenty years of age, in falling from his horse sustained an injury of the elbow-joint, which was treated with lotions and splints for six weeks before he called upon me. The arm was nearly straight from the continued use of splints, and possessed very limited motion at the elbow. The tumefaction having entirely subsided, the dislocation of both bones backwards was very obvious. After making, in vain, every effort that prudence would permit to reduce the dislocation, I ventured upon the subcutaneous section of the triceps extensor cubiti, just above its attachment to the olecranon, thinking it possible that, by removing what then seemed to be the greatest obstacle to the flexion of the forearm, I might succeed in bending it, and that, even if he lost the use of this important muscle, the permanent flexion of the arm would be better than a permanent straightness. I did, then, succeed in bringing the forearm nearly to a right angle, but without reducing the dislocation. The patient was directed to move the arm daily, and to shorten the sling in which it was kept, from time to time. About five years have now elapsed since the operation, and I have not heard the result.

Case V. This was a case somewhat similar to the last. The gentleman (about twenty-five years of age) resided in one of our upper counties, and had been treated several weeks under a misapprehension of the nature of the injury. He then came to this city, and placed himself under the charge of another physician. I was called in consultation, and we detected a dislocation of the elbow backward. My professional associate administered chloroform, and made every effort to reduce the dislocation, in vain. Under the influence of the powerful aid of Jarvis's adjuster, the attempt to flex the arm resulted in the fracture of the olecranon. This permitted considerable motion of the joint, and the patient left here much improved in that respect—but with the dislocation still existing.

Case VI. This is the case of a robust Irish labourer, whose dislocation was of some weeks standing, when I was requested to assist a professional brother in its reduction. Chloroform was administered, and the most strenuous exertions made without succeeding in the reduction.

Case VII. F. W., a boy seven years of age, fell from a platform about four feet high, and dislocated the bones of the forearm backwards at the elbow-joint. Seeing him a few hours after, the dislocation was readily reduced by traction with my right hand, whilst the other was applied to the bend of the arm so as to press back the bones.

It will be remarked that of the seven cases above reported, three remained with permanent deformity—and that this result was, in these three cases, the consequence of incorrect diagnosis. With these facts before us, the writer trusts that this communication may not appear to be altogether a work of supererogation.

—

An Act to promote Medical Inquiry and Instruction.—[The following act has been introduced by Mr. Tuthill, in the Assembly of the State of New York, March 13, 1851. It has been read twice, and referred to the committee on medical societies and colleges—reported from said committee, and committed to the committee of the whole.]

The People of the State of New York, represented in Senate and Assembly, do enact, as follows:—

Sec. 1. Any physician or surgeon, duly qualified according to the law of this State, or any medical student under the authority of any such physician, may have in his possession human bodies, or parts thereof, for the purposes of anatomical inquiry or instruction.

Sec. 2. Either of the following board of officers, to wit, the overseers of the poor of any town of this State, and the commissioners of health, the city inspector, or the mayor and aldermen of any city of this State, may surrender the dead bodies of such persons as are required to be buried at the public expense, to any regular physician, duly qualified according to law, to be by him used for the advancement of anatomical science; preference being always given to the medical schools, by law established in this State, for their use in the instruction of medical students.

Sec. 3. No such dead body shall in any case be so surrendered, if the deceased person, during his last sickness, requested to be buried, or if, within the twenty-four hours after his death, any person claiming to be of kindred or a friend to the deceased, and satisfying the proper board thereof, shall require to have the body buried, or if the deceased person was a stranger, or traveller, who suddenly dies there, making himself known; but the dead body shall in all such cases be buried.

Sec. 4. Every physician shall, before receiving such dead body, give to the board of officers surrendering the same to him a sufficient bond that each body, so by him received, shall be used only for the promotion of anatomical science or instruction, and that it shall be used for such purpose within this State only, and so as in no event to outrage the public feeling.

[We trust this act will receive the sanction of the legislature, and the code thus be relieved from the glaring injustice and inconsistency of requiring from physicians, under a heavy penalty, a knowledge of anatomy, and forbidding them, by equally severe penalties, from having recourse to the sole means of acquiring it.]

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American Medical Association.—The fourth annual meeting will be held on the first Tuesday (6th) of May, and *not on the second Tuesday*, as announced in some of the journals.

"The Committee of Arrangements request all societies and other institutions authorized to send delegates, to forward a correct list of those selected to attend the next annual meeting to the Secretary, Dr. H. W. De Saussure, at Charleston, S. C., on or before the first day of April.

"In consequence of the resignation of Dr. Stillé, one of the Secretaries, from ill health, all communications intended for the next meeting of the Association must be addressed to the remaining Secretary, Dr. H. W. De Saussure, Charleston, S. C."

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GRADUATES OF JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA,

MARCH, 1851.

At a Public Commencement, held on the 8th of March, 1851, the degree of Doctor of Medicine was conferred on the following gentlemen by the Hon. Edward King, President of the Institution; after which a Charge to the Graduates was delivered by Professor Mütter.

NAME.	STATE.	SUBJECT OF THESIS.
Abbitt, William B.	Virginia.	Remittent Fever.
Albright, Durant H.	North Carolina.	Menstruation and its Diseases.
Armistead, William B.	Alabama.	Typhus.
Baily, Elisha S.	Pennsylvania.	Peculiarities of the Fœtal Circulation.
Baily, R. Jones	Pennsylvania.	Anatomy and Physiology of the Cerebellum.
Barber, James K.	Ohio.	Ergot.
Bateman, Ephraim	New Jersey.	History of Syphilis.
Bates, James M.	Maine.	Acute Pneumonia.
Battle, Lucius Lucullus (M. D.)	Tennessee.	Deleterious effects of Atmospheric Air when introduced into the Venous System.
Beaver, Ephraim K.	Pennsylvania.	Responsibilities of the Medical Profession.
Berry, William Frederic	North Carolina.	Typhoid Fever.
Black, Abraham	Virginia.	Delirium Tremens.
Bly, Douglas	New York.	Reduction of the Femur without extension when Luxated on the Dorsum Ilii.
Bobb, William H.	Pennsylvania.	Cathartics.
Booth, William C.	Virginia.	Autumnal Remittent Fever.
Boswell, John J.	Virginia.	Comparative Physiology of Digestion.
Brannock, James M.	North Carolina.	Typhoid Fever.
Brinker, Reuben	Pennsylvania.	Acute Meningitis.
Brooks, John G.	Maine.	Acute Gastritis.
Brownrigg, John	Mississippi.	Congestive Fever.
Brubaker, Henry	Pennsylvania.	Acute Pleurisy.
Burnett, Elisha G.	New York.	Ergot.
Campbell, Algernon E.	Virginia.	Pneumonia.
Carnal, Reuben H.	Louisiana.	Typhoid Fever.
Carriger, John H.	Tennessee.	The Young Physician; his Hopes, Fears, and Responsibilities.
Carrington, Paul S.	Virginia.	Pneumonia.
Carter, Flournoy	Georgia.	Pneumonia.
Cary, Charles W.	Virginia.	Arsenic and its Compounds.
Cheney, Francis M.	Georgia.	Typhoid Fever.
Christian, William S.	Virginia.	"Propter solum Uterum Mulier est id quod est."
Coleman, Charles T.	Virginia.	Digestion.
Coleman, Richard M.	Virginia.	Urinary Calculi.
Collins, Thomas B.	New York.	Pathology of Pneumonia.
Conner, William H. H.	North Carolina.	Pneumonitis.
Cook, Columbus L. (M. D.)	North Carolina.	Importance of Study to the Medical Practitioner.
Cook, George H.	Pennsylvania.	Sympathy between the Mind and Body.
Couse, George	Canada.	Delirium Tremens.
Craig, James W.	New York.	Local Blood-letting.
Crouse, William	Pennsylvania.	Dysentery.
Cutliff, James S.	Louisiana.	Embryogeny.
Dana, Charles H.	Pennsylvania.	Cynanche Trachealis.
Davidson, Henry G. (M. D.)	Virginia.	Comparative Anatomy and Physiology of the Digestive System.
Dickson, James G.	Pennsylvania.	Lymphosis.
Dingee, Richard	Pennsylvania.	Hygiene.
Dingley, Amasa J.	Maine.	Morbid Conditions of the Blood.
Duffey, John W.	Georgia.	Acute Hepatitis.

NAME.	STATE.	SUBJECT OF THESIS.
Dulany, U. Heath	Virginia.	Entero-mesenteric Fever.
Duncan, George K.	Tennessee.	Acute Gastritis.
Edmonds, Samuel C.	New Jersey.	Hectic Fever.
Eggleston, Joseph D.	Virginia.	Urinary Calculi.
Eshleman, Isaac S.	Pennsylvania.	Congestion.
Evans, J. Mason	Virginia.	Entero-mesenteric Fever.
Evans, Joshua R.	Pennsylvania.	Epidemic Cholera.
Fearing, Benjamin, Jr.	Massachusetts.	Phlegmatia Dolens.
Fisher, Preston	Maine.	Cynanche Trachealis.
Fitts, William F.	Alabama.	Oleum Terebinthinæ.
Fleming, Thomas M.	Virginia.	Digestion.
Flewellen, Edward A.	Georgia.	Cinædia.
Floyd, Frederic	Virginia.	Pathological Hæmatology.
Foote, Charles C.	Connecticut.	History and Medical Properties of Ergot.
Fort, Joseph M.	Texas.	Acute Gastritis.
Fox, Joseph M.	Kentucky.	Typhus Fever.
Friend, John Edward (M. D.)	Virginia.	Entero-mesenteric Fever.
Friend, George W.	Virginia.	Phrenology.
Fussell, Morris	Pennsylvania.	The Decidua.
Gaddis, Elijah Franklin	Alabama.	Malaria.
Gaither, Brice T.	Georgia.	Typhoid Fever in Middle Georgia.
Gale, Robert H.	Kentucky.	Milk Sickness.
Gary, Franklin F.	South Carolina.	Endemic Fever of Cokesbury, South Carolina.
Geare Frederic (M. D.)	New York.	Phthisis Pulmonalis.
Gegan, John, Jr.	Pennsylvania.	Intermittent Fever.
Gibbons, Thomas P.	Pennsylvania.	Certain Diseases of the Diastaltic Nervous System.
Glenn, Lucius B.	Alabama.	Acute Pleurisy.
Golding, Walter S.	North Carolina.	Laryngo-tracheitis.
Gorin, William H.	Kentucky.	Albuminuria.
Griesemer, Enoch E.	Pennsylvania.	Acute Rheumatism.
Haggard, William D.	Kentucky.	Entero-mesenteric Fever.
Hall, Samuel E.	Georgia.	Rheumatic State of Fever.
Hall, William M.	Tennessee.	Enteric Fever.
Hamer, Ellis P.	Pennsylvania.	Pleurisy.
Hamilton, George S.	Virginia.	Intermittent Fever.
Hancock, Charles	Virginia.	Typhoid Fever.
Hassenplug, Jacob H.	Pennsylvania.	Iodine and its Therapeutical Effects.
Havis, Minor W.	Georgia.	Menstruation.
Hazlett, Robert W.	Pennsylvania.	Physic.
Henderson, Andrew J.	Virginia.	Gunshot Wounds.
Herrick, J. Everette	New Hampshire.	Erysipelas.
Hershe, Christian	Iowa.	Pneumonia.
Heyward, James F.	Delaware.	A new Method of Dissolving Calculi in the Bladder.
Holbrook, William S.	Virginia.	Placenta Prævia.
Hood, Humphrey H.	Pennsylvania.	Inflammation.
Hope, Jesse P.	Virginia.	Inflammatio Pleuræ.
Howitt, John	Canada.	Acute Bronchitis.
Hume, William	Canada.	Acute Dysentery.
Hunter, George Baxter	Virginia.	Responsibilities of the Physician.
Huntington T. Romeyn	New York.	Scarlatina.
Huston, James M.	Virginia.	The Pulse.
Irvine, Patrick C. (M. D.)	Virginia.	Pneumonia.
Jackson, Winslow	Massachusetts.	Scarlatina.
James, Nathan	Pennsylvania.	Angina Membranacea.
Jenkins, William A.	Virginia.	Pneumonia.
Johnson, Emmanuel H.	Pennsylvania.	Endo-gastritis.
Johnson, William M.	North Carolina.	Dystocia Abortiva.
Judson, Oliver A.	Pennsylvania.	Iritis.
Kelly, Samuel H.	Virginia.	Cephalalgia Nervosa.
Keenon, John G.	Kentucky.	Pneumonia.
Keys, John	Pennsylvania.	Catalepsy.
Lamm, William A. B.	Georgia.	Epidemic Erysipel

NAME.	STATE.	SUBJECT OF THESIS.
Lane, E. L. C. (M. D.)	Illinois.	De Febribus Miasmaticis in Illinois Septentrionali.
Layton, Joseph	Ohio.	Oblique Inguinal Hernia.
Leinbach, Benjamin S.	Pennsylvania.	Rural Practitioner.
Lemmon, William	Pennsylvania.	Typhoid Fever.
Lewis, J. Henry	Texas.	Lobelia Inflata.
Line, William M.	Pennsylvania.	Intermittent Fever.
Lovejoy, James W. H.	Dist. of Columbia.	Acute Rheumatism.
Luckett, Francis E.	Virginia.	Pneumonia.
Mackey, James Howard	Pennsylvania.	Oblique Inguinal Hernia.
Madison, Robert L. (M. D.)	Virginia.	Comparative Anatomy and Physiology of the Nervous System.
Martin, William Henry	Kentucky.	Modus Operandi of Medicines.
Matteson, John C.	New York.	Acute Pneumonia.
McCorkle, John R.	North Carolina.	Dysentery.
McClung, John A.	Virginia.	Intermittent Fever.
McGrigor, Thompson L.	Virginia.	Puerperal Peritonitis.
McGuire, John G.	Pennsylvania.	Electricity.
McIntyre, De Witt C.	New York.	Anatomy and Physiology.
McNutt, Robert	Delaware.	Acute Rheumatism.
McWhinney, Arthur	Pennsylvania.	Meningitis Tuberculosa.
Meigs, James Aitken	Pennsylvania.	Hygiene and Therapeutics of Temperament.
Meisenhelder, Samuel	Pennsylvania.	Remittent Fever.
Mellen, George F.	Maine.	Necrosis.
Merritt, William (M. D.)	Virginia.	Comparative Physiology of the Circulation.
Miller, William Lamech	Pennsylvania.	Anæmia.
Miller, William Robards	North Carolina.	The Ovaries.
Milligan, Francis H.	Missouri.	Placenta Prævia.
Moodey, Joseph H.	Pennsylvania.	Variola.
Moody, Thomas H.	Tennessee.	Physiology of Digestion.
Moore, Ira L.	Massachusetts.	Typhoid Fever.
Moore, Mathew S.	South Carolina.	Mercury as a Therapeutic Agent.
Moore, Maurice A.	South Carolina.	Dyspepsia.
Morris, George W.	South Carolina.	Cinchona.
Morrison, M. Porter	Pennsylvania.	Modus Operandi of Medicines.
Mulford, Francis D.	New Jersey.	Tubal Fecundation.
Mullins, James C.	North Carolina.	Delivery of the Placenta.
Neff, Henry K.	Pennsylvania.	Anatomy and Physiology of the Heart.
Nice, Franklin B.	Pennsylvania.	Intermittent Fever.
Nice, George W.	Pennsylvania.	Cholera Infantum.
Oaks, Samuel	Pennsylvania.	Death.
Oden, J. Beverly	Virginia.	Percussion.
Overton, William M.	Virginia.	Entero-mesenteric Fever.
Owens, Bennett G.	Alabama.	Typhoid Fever.
Parker, Oscar F.	New York.	Rubeola.
Perkins, Joseph B.	Mississippi.	Pneumonia.
Perkins, Lewis W.	Virginia.	Remittent Fever.
Peterson, Bowman H.	New Jersey.	Typhoid Fever.
Phillips, William W. L.	New Jersey.	Menstruation.
Piatt, William A.	Pennsylvania.	Typhoid Fever.
Poindexter, Edward H.	Virginia.	Colica Pictonum.
Pratt, J. Richmond	New York.	Prognosis.
Proctor, Pelatiah R.	Canada.	Spinal Irritation.
Rankin, E. Davidson	Pennsylvania.	Moral Character of the Physician.
Rankin, William M.	Pennsylvania.	Retroversion of the Uterus.
Reddick, Samuel T.	Pennsylvania.	Entero-mesenteric Fever.
Reese, Beverly P.	Virginia.	Dysentery.
Ridgill, Henry L.	South Carolina.	Malaria.
Robinson, Frederic C.	Ohio.	Icterus.
Rogers, Henry R.	Maine.	Rubeola.
Roper, Daniel W.	Kentucky.	Acute Meningitis.
Rose, Latinus Irvine	Virginia,	Rubeola.
Ruby, Cyrus B.	Pennsylvania.	Dysentery.

NAME.	STATE.	SUBJECT OF THESIS.
Rugh, Jacob W.	Pennsylvania.	Acute Peritonitis.
Russell, Preston W.	Pennsylvania.	Electricity, and its application to Electrolysis.
Sandford, Robert J.	Virginia.	Nephritis.
Saunders, Samuel	Virginia.	Functions of some parts of the Human Frame.
Schively, George Singer	Pennsylvania.	Pneumonia.
Scofield, John S.	Kentucky.	Mechanism of the First Position of the Vertex.
Scott, A. Howard	Virginia.	Placenta Prævia.
Scott, William Walter	North Carolina.	Pneumonia.
Sharpe, William R.	North Carolina.	Pneumonia.
Simmons, Allen J.	Georgia.	Adynamic Fever.
Smith, Albert D.	Vermont.	Mercury.
Smith, Bart M.	Georgia.	Procreation.
Smith, James Gregory	Kentucky.	Inquiry into the Circulation.
Smith, Pembroke	Virginia.	Scarlatina.
Smith, Sandford F.	Missouri.	Acute Diarrhœa.
Smith, Walter R. (M.D.)	North Carolina.	Pneumonia.
Spruill, George E.	North Carolina.	Endo-gastritis.
Squire, William H.	Pennsylvania.	Hydrocele and Hæmatocele.
Statler, Samuel G.	Pennsylvania.	Scarlatina.
Stoakley, William S.	Virginia.	Dropsy.
Stocker, Jesse	Virginia.	Reproduction.
Stone, Samuel A.	Virginia.	Remittent Fever.
Stoner, John	Pennsylvania.	Medical Experience.
Suesserott, Jacob L.	Pennsylvania.	General Bloodletting.
Taylor, James	Pennsylvania.	Digestion.
Taylor, J. Marcus	Mississippi.	Typhoid Fever.
Taylor, Julian	Virginia.	Hysteria.
Thom, J. Pembroke	Virginia.	Oxygen.
Thomas, Robert W.	North Carolina.	Puerperal Peritonitis.
Thompson, Stephen S.	Kentucky.	General Indications.
Thomson, John A.	Delaware.	Malformations and their Causes.
Tipton, Richard H.	Ohio.	Hysteria.
Tullis, Thomas Erskine	Alabama.	Epidemic Dysentery as it occurred in Geneva, Georgia, in the summer of 1849.
Turner, Charles P.	Pennsylvania.	Causes of Deafness.
Tyson, John Ambrose	Tennessee.	Pneumonia.
Umstad, Henry U.	Pennsylvania.	Puerperal Fever.
Vaughn, George W.	Alabama.	Melituria.
Venable, Richard N.	Virginia.	Report on Puerperal Fever.
Vernon, Elias	Canada.	Accidental Hemorrhage.
Vollum, Edward P.	New York.	Aneurism.
Wallace, James J.	Pennsylvania.	Scarlatina.
Walser, Theodore	Switzerland.	Assimilation.
Ward, Erastus B.	Virginia.	Entero-mesenteric Fever.
Ward Meredith G.	Tennessee.	Acute Hydrocephalus.
Warren, Edward (M.D.)	North Carolina.	Scarlatination.
Weeks, William C.	Virginia.	Gonorrhœa.
Weir, John M.	Virginia.	Toxicology.
West, William H. Jr.	Virginia.	Conduct of Natural Labour.
Wilson, John W.	Virginia.	Physiology of Respiration.
Wingfield, Alonzo C.	Georgia.	Empiricism.
Witman, Henry O. (M.D.)	Pennsylvania.	Acute Dysentery.
Wolf, John A.	Pennsylvania.	Entero-Mesenteric Fever.
Wood, Charles S.	Connecticut.	Menstruation.
Wright, Thomas E.	Virginia.	Pneumonia.
Wyker, Alfred	New Jersey.	Menstruation.
Young, George W.	Missouri.	The Heart.

The *ad eundem* degree of Doctor of Medicine was conferred on Thomas G. Meachem, M.D., and on Charles G. Pomroy, M.D., of New York.

Total, 227.

R. M. HUSTON, M.D., *Dean of the Faculty.*

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